

MAY • 1946

Vol. 3 • No. 5



LONDON GUARANTEE BUILDING
Michigan Avenue at Wacker Drive
THE HOME OF

finish

MONTHLY TRADE PUBLICATION

Published by

DANA CHASE PUBLICATIONS
360 North Michigan Avenue
Chicago 1
Telephone Central 1229

The only independently published trade publication devoted exclusively to Porcelain Enameling and Ceramic Finishing on metal.

Free controlled circulation to management, purchasing and key plant personnel in companies intimately connected with the domestic ceramic finishing industry. To others, subscription price \$3.00 per year. Foreign subscription price (U. S. funds) \$5.00 per year.

Editor and publisher, DANA CHASE.
Associate editors, PROF. A. I. ANDREWS
and PROF. R. M. KING.

COPYRIGHT 1946

DANA CHASE PUBLICATIONS
PRINTED IN U.S.A.

LOW TEMPERATURE CERAMIC COATINGS HAVE MANI- FOLD USES.....	By L. O. Risetter	13
THE SHEET STEEL SITUATION.....	By Norman W. Foy	16
THE USE OF ARCHITECTURAL PORCELAIN ENAMEL	By Mark van der Kloet	17
DRY PROCESS ENAMELING PRACTICE — Part I	By W. J. Baldwin	19

Features

THE FINISH LINE — An Editorial.....	11
CENTRAL DISTRICT ENAMELERS CLUB finishfotos.....	22-23
THE KITCHEN BEAUTIFUL.....	30-31

Ceramic Finish News

CENTRAL DISTRICT ENAMELERS CLUB SECOND CLEVELAND MEETING.....	22
WASHINGTON ROUND-UP.....	By Wilfrid Redmond 26
INDUSTRY NEWS AND PERSONALS.....	28
CHICAGO TECHNICAL MEN HEAR PANEL DISCUSSIONS ON CERAMICS AND PORCELAIN ENAMELS	38

Miscellaneous

NEW EQUIPMENT, MATERIALS AND PROCESSES.....	44
INDUSTRIAL LITERATURE	45
ADVERTISERS' INDEX	60
CLASSIFIED ADVERTISING	60

finish

CERAMIC FINISHES ON METAL

...if you have learned the "3 Rs" the hard way

The "Lo-Hi" process of cleaning metal preparatory to enameling consists of both a low pH and a high pH solution, in separate tanks (two baths) to provide for the thorough removal of soil regardless of degree of alkalinity or acidity. What the one bath doesn't get the other does. This method assures a chemically clean surface particularly impressive to management that has learned the hard way the penalties involved in 1. Repickle; 2. Reboil; and 3. Rejects. . . .

Send for twenty four page catalog that describes thirty nine different cleaning and drawing compounds.



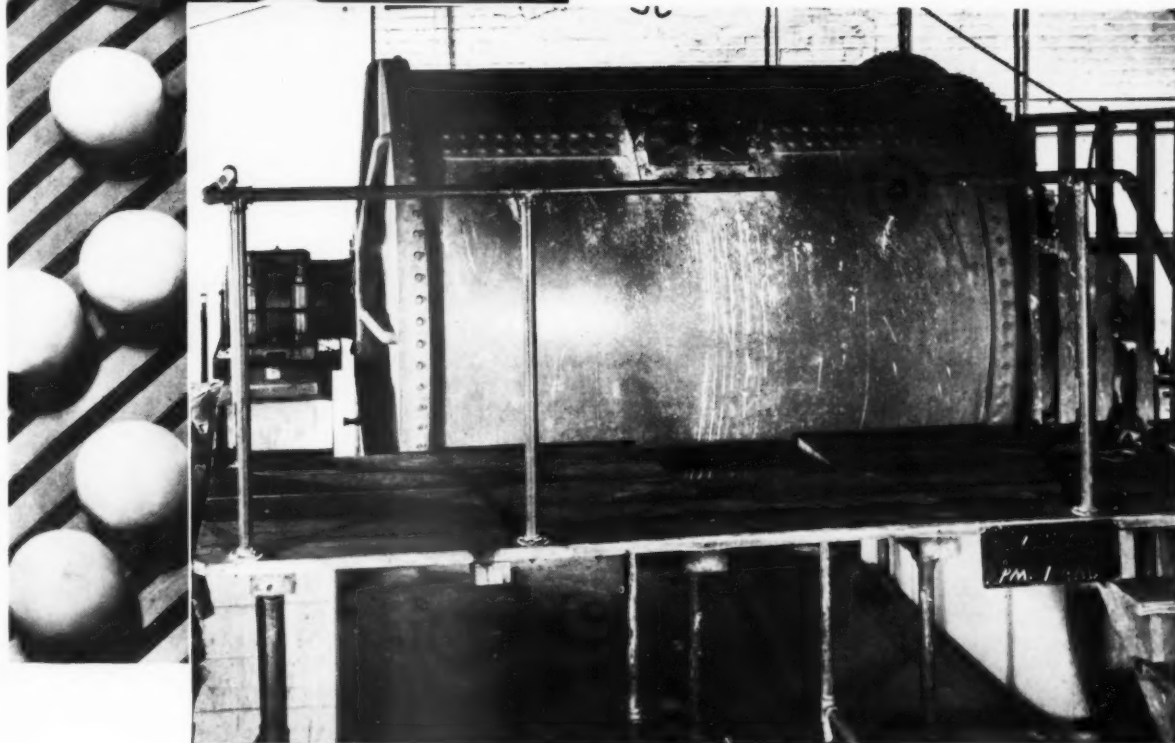
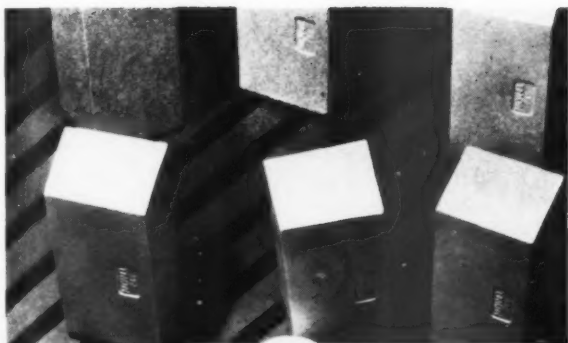
NORTHWEST CHEMICAL CO.
9310 ROSELAWN DETROIT 4, MICH.



pioneers in pH cleaning control—serving you since

'32

PARTNERS IN PRODUCTION



GIVE YOUR mill room a set of real working partners—McDaniel mill-tested grinding balls and McDaniel extra-fired lining brick. They may be depended upon to carry their share, and more, of a profit-making department.

Time is money. Throughout the porcelain enameling industry, McDaniel supplied mill rooms operate with a minimum of maintenance shut-downs consistently attaining excellent production records. These "on-the-line" rec-

ords, assuring continuous high production, have won McDaniel products the coveted position as a standard of quality.

The large demand for McDaniel mill-tested grinding balls and extra-fired lining brick precludes the possibility of immediate shipment. Be assured, however, that your order will receive immediate attention, and that we are producing to fullest capacity consistent with our quality standard.

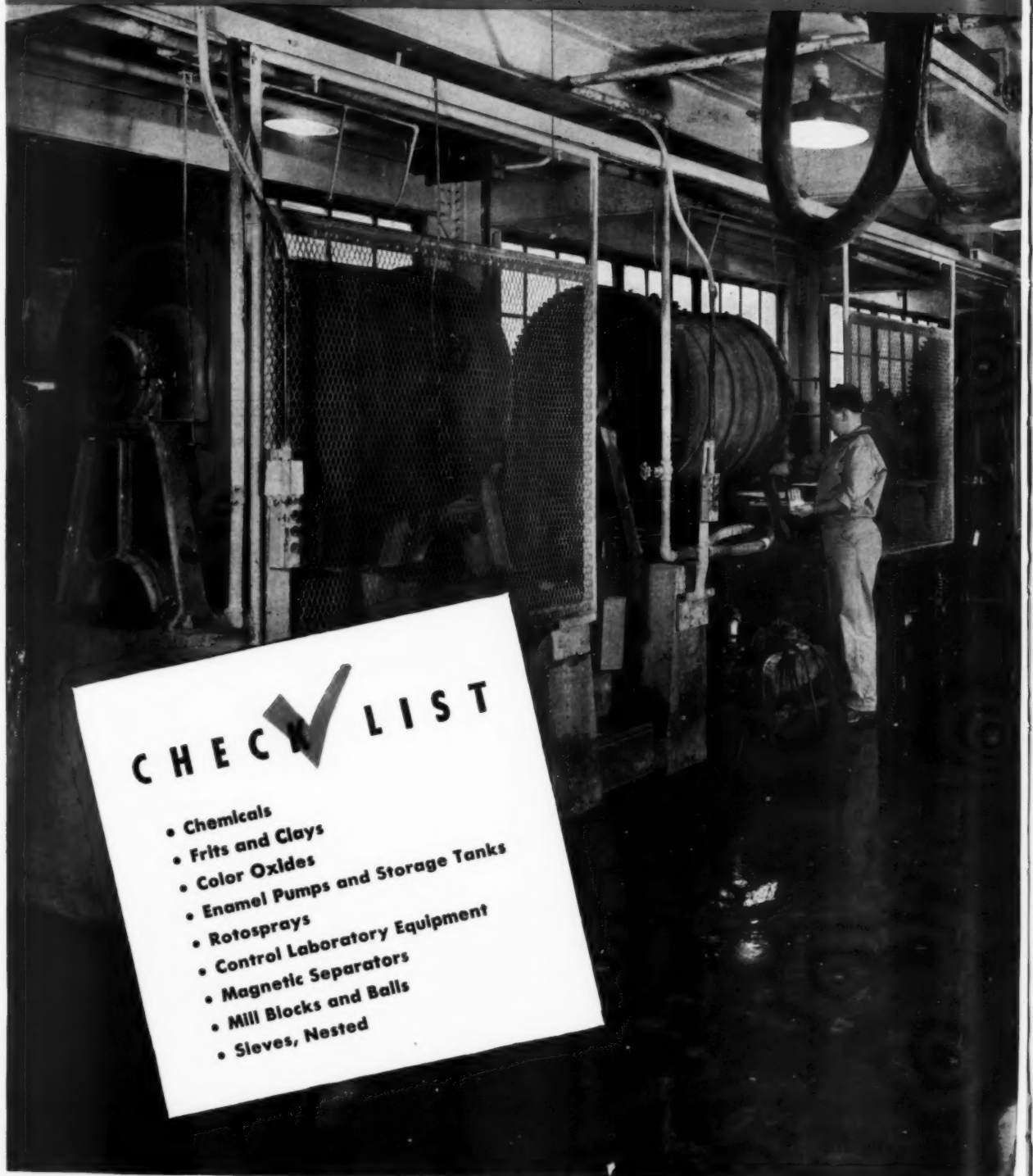
McDANIEL REFRACTORY PORCELAIN CO.

BEAVER FALLS, PENNSYLVANIA

CHICAGO VITREOUS ENAMEL PRODUCT COMPANY • EXCLUSIVE REPRESENTATIVES FOR THE ENAMELING INDUSTRY.

finish MAY • 1946

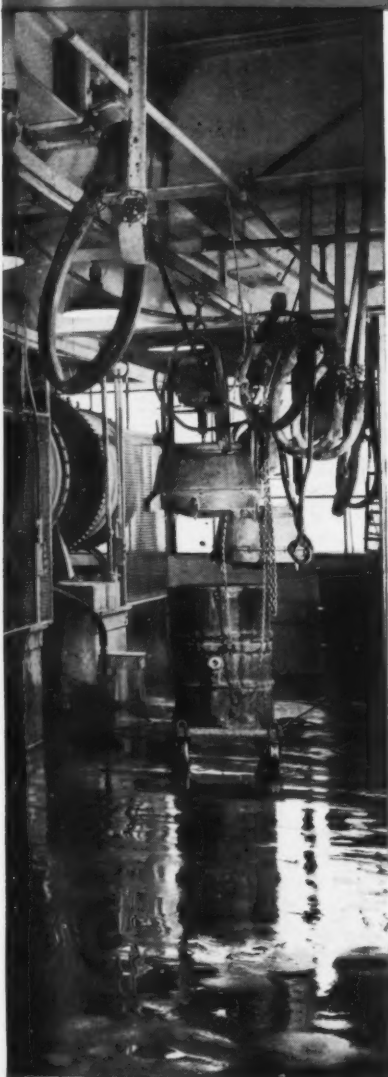
Have you looked at your



CHECK LIST

- Chemicals
- Frits and Clays
- Color Oxides
- Enamel Pumps and Storage Tanks
- Rotosprays
- Control Laboratory Equipment
- Magnetic Separators
- Mill Blocks and Balls
- Sieves, Nested

Millroom recently?



● Have you looked at it *critically*? Made sure you have everything needed for large volume, high-quality production . . . and at minimum cost?

In these days of rapid conversion, we are all apt to overlook some of the adjustments and replacements—perhaps new types of equipment, too—needed for peak production.

You may also want to check and *double-check* some of the basic materials you are using—evaluate them by today's new and higher standards.

Whatever you do . . . and whatever you need . . . you'll find us willing and able to help you. Remember, Ferro is headquarters for complete porcelain enameling supplies and equipment, as well as for engineering and new process developments. How and when can we serve you?



FERRO ENAMEL CORPORATION
4150 EAST 56TH STREET
CLEVELAND 5, OHIO



When G. I. Jimmy

parachuted down into an isolated Chinese village of 20 people, he learned a lot about his own U.S.A. His story checks so closely with our ideas that we've written a booklet about it . . .

Jimmy was cut off from civilization for seven months. As he watched the primitive existence of the natives, who toiled their entire lives for the bare necessities of living, he began to realize what it was that made America great.

He thought of his old job as an appliance salesman, and saw for the first time how every sale he made, made money for many other people. He saw that everybody's energy and intelligent efforts help everybody else in America, and for that reason all are far better off.

And Jimmy figured out one more thing . . . that as long as people concentrate on the idea of *keeping men and money at work*, prosperity will be no problem in this country.

The booklet we mentioned follows this thought to its logical conclusion. Originally printed for our employees, it is called "Not by Bread Alone."

Your request will bring a copy, and if you think it would interest your employees, let us know.

★ ★ ★

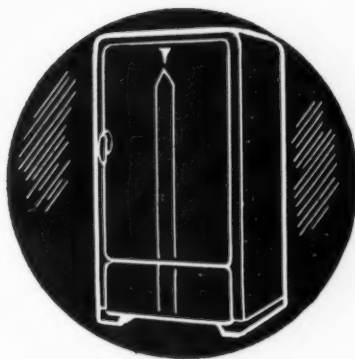
We manufacture Youngstown Kitchens, large steel stampings, and porcelain enameled equipment. By making the best products we can, and selling them at fair prices, we strive to keep men and money at work, the free American way.

MULLINS MANUFACTURING CORPORATION
Salem, Ohio



Design Engineering Service — Large Pressed Metal Parts
Porcelain Enameled Products

MAY • 1946 finish



METAL AND THERMIT

Serves Ceramic Industry with Complete Line of Opacifiers

Outstanding improvement in the quality of steel or cast iron enamels and ceramic glazes is convincingly demonstrated by the use of the correct Metal and Thermit ceramic opacifier in your formula. A leading producer of these materials, Metal and Thermit's carefully controlled methods of manufacture by skilled technicians insure a high degree of opacity and uniformity, and a pure, brilliant finish for your products.

The following opacifiers have been used successfully for a wide variety of needs:

Sodium Antimonate—to impart opaqueness and gloss to dry process cast iron enamels as well as acid resistant sheet steel enamels.

Antimony Oxide—employed in antimony type frits and in acid resistant sheet steel enamels.

Tin Oxide—this universal opacifier for ceramic glazes is temporarily manufactured under government regulations and at present is available only for the production of green, pink, yellow or red colors.

Ultrax—a superior zirconium silicate opacifier for white and colored glazes. Excellent for the production of sanitary ware, wall tile, terra cotta and art ware glazes.

Zircon—used as an opacifier in sheet steel enamels ... certain ceramic glazes ... and in the making of molds for precision casting of aluminum, magnesium and steel.

Our staff of experienced laboratory technicians is available to assist you in the proper selection of these materials and in the development of formulae assuring optimum results at lowest possible costs. Furthermore, because Metal and Thermit carries a complete line of ceramic opacifiers, you can be sure of unbiased recommendations.

METAL & THERMIT CORPORATION
120 Broadway, New York 5, N. Y.

CERAMIC DIVISION



Arc Welding
Electrodes



Tin



Ceramic
Opacifiers



Industrial
Chemicals



Thermit
Welding

We have the plant and the equipment



YOU SUPPLY THE MATERIAL

Have you accumulated a stock of steel against the time when you will be in full production? Is your stamping shop busy? Why not let us make your parts from your metal? Would you prefer to do your own forming? If that is the case, send us your fabricated black iron parts and we will enamel them.

We are equipped to use any of the commercial enamels—acid resisting if you like, or any of the dark one coat colors.

You will get prompt shipments, usually via our own trucks.

Send us blue prints or samples. Give us some idea of quantities. We shall be glad to quote.

VITREOUS STEEL PRODUCTS CO.

BOX 1791, CLEVELAND 5, OHIO (Factory at Nappanee, Ind.)

THE Finish Line

CALL IT PUBLICITY — call it public relations, or name it anything you like — we believe you will agree with us that in this day and age any progressive industry must have a plan of *education* and *promotion* for its products.

In the "Finish Line" for June, 1945, under the heading "Too Little, Too Late," we voiced the opinion that there has always been some tendency in the porcelain enameling industry to depend on the outstanding advantages of our product to do the selling job.

The competitor scare

It's only natural in urging the expansion of any program that the work of competing groups or industries is cited. Competitive product manufacturers have, for the most part, taken greater advantage of their possibilities for promotion through educational publicity than is true among manufacturers of porcelain enameled products.

The power of the press

Again in the "Finish Line" for June, 1945, we read: "When you see innumerable articles in magazines and newspapers on competing products, don't forget that as a rule data for these articles comes from some source associated, or in close contact, with the product. At present the porcelain enameling industry makes no provision for furnishing editors constructive data of a technical, practical or educational nature designed for editorial use.

"Most editors are busy men, and if our industry does not feel that it has a story to tell, then it is improbable that the average editor will feel obligated to 'dig' for stories on porcelain enamel.

"This is a subject deserving thought and 'action.'"

Both advertising and educational publicity have important jobs to do, but we want to make it clear that our discussion in this instance is confined solely to publicity and editorial information.

A start has been made

Some of our well known enamel executives have been lecturing before technical and lay groups in an effort to spread constructive information on porcelain enamel. This type of work is badly needed, and should be encouraged in the interest of "spreading the gospel" to both technical groups and the men and women who make up the "buying public."

finish MAY • 1946

A bright spot in current educational activity was a dinner held recently at the St. Regis Hotel, in New York City, for editors of leading publications. This dinner was sponsored by the Porcelain Enamel Institute through its advertising council, Walker & Downing. The response to this gesture was unusually good, and opens the door to constructive work with the many important publications represented.

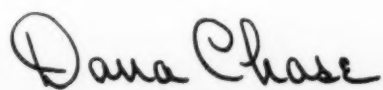
Editors of many of the nation's leading publications now have a new concept of porcelain enamel, and many of them will be far more interested and open minded concerning the use of constructive editorial material on subjects related to our industry, once it is made available.

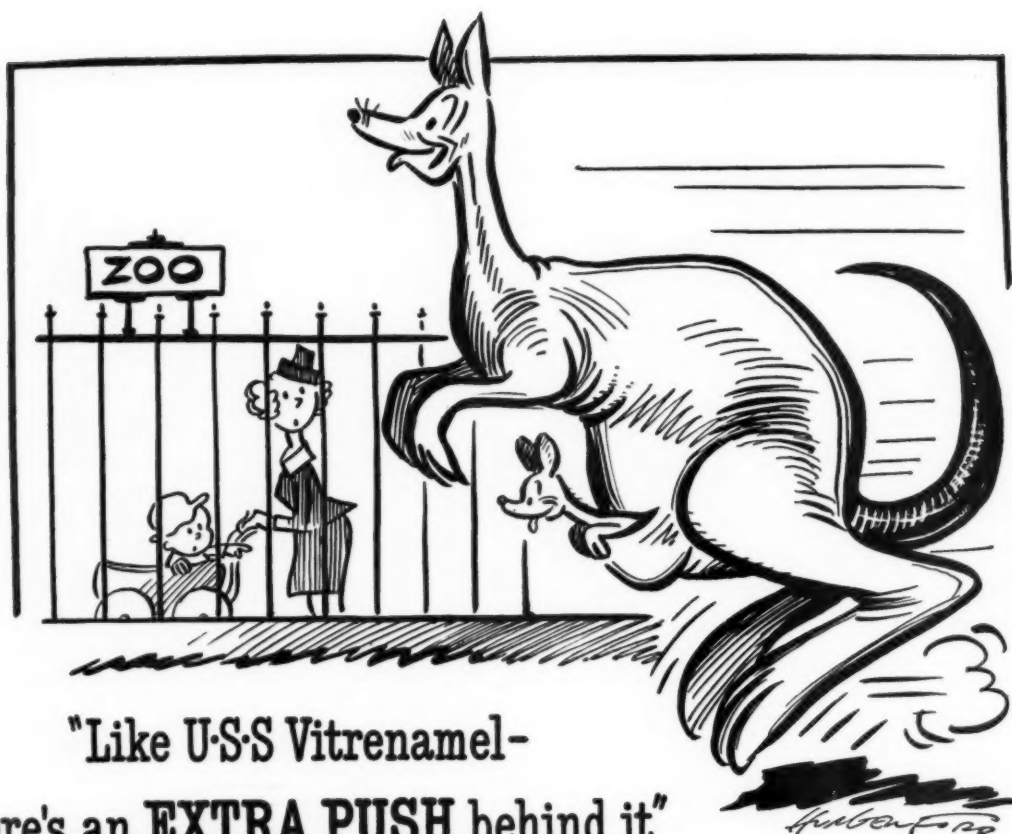
The responsibility is yours

Regardless of the ability of those who are in charge of publicity for our industry, they are helpless to do the job we should have done without the complete cooperation of those companies and individuals within the industry who control its operation, and from whose plants developments worthy of editorial treatment must come.

There may be companies who feel that because they have a "first" on some porcelain enameled product, that has news value or editorial interest, their best bet is to assume a "dog in the manger" attitude and guard against publicity in order to keep all of the business for themselves. Actually, we all know that almost anything that has been accomplished in the industry is the common knowledge of most competitors soon after the progress has been made. Therefore, isn't it much better — either from an industry standpoint or from a strictly selfish standpoint — for a company to make the most of all such developments and cooperate whole-heartedly with those who are in position to assist in its effective use for publicity and editorial purposes?

If you have a development that you feel has editorial or news value, we urge that you *use* it or advise the P.E.I. You will not only place your company in the limelight as a leader, but will assist the entire industry in getting the recognition for porcelain enamel that it rightfully deserves.


EDITOR AND PUBLISHER



"Like U·S·S Vitrenamel-
there's an **EXTRA PUSH** behind it"



NO! . . . Of course we don't claim any relationship between the kangaroo and U·S·S VITRENAMEL Sheets. But we can make this comparison: Both are unsurpassed in their respective fields. And both do have an **EXTRA PUSH** behind them.

There just isn't a better base metal available than U·S·S VITRENAMEL Sheets. They're made especially for fine porcelain enamel work. They're

strong, rigid, flat; they hold their shape under stress and strain; they have sufficient ductility to take deep draws; and they have punching, shearing and stamping qualities that assure longer die life.

And the **EXTRA PUSH**? Well, it's the advantage of identifying yourself with the U·S·S Label, with all the prestige that implies. It's the unequalled public acceptance that

has been achieved through the most impressive and consistent program of advertising and promotion ever launched on consumer products made from steel. It's the definite assistance you get in solving any specific problem of marketing or merchandising which may confront you at any time. We thus help you sell your products to the public and make it easier for you to do business and increase your profits. That is what we mean by the **EXTRA PUSH** behind U·S·S VITRENAMEL Sheets!

If your quality porcelain enameled products are not now identified with the U·S·S Label — and you want them to be—full information will be sent you upon request.

U·S·S VITRENAMEL SHEETS

CARNEGIE-ILLINOIS STEEL CORPORATION

Pittsburgh and Chicago

Columbia Steel Company, San Francisco, Pacific Coast Distributors

Tennessee Coal, Iron & Railroad Company, Birmingham, Southern Distributors

United States Steel Export Company, New York

EVERY SUNDAY EVENING, United States Steel presents *The Theatre Guild on the Air*. American Broadcasting Company coast-to-coast network. Consult your newspaper for time and station.

UNITED STATES STEEL

Low temperature ceramic coatings

have manifold uses

they offer a logical "bridge for the gap" between organic finishes and "high temperature" ceramic coatings

By Leonard O. Risetter • PRESIDENT, INDUSTRIAL COATINGS CORPORATION, CHICAGO, ILL.

finish

Our company was originally started for the purpose of lining industrial storage tanks. We applied a lining, glass-like in appearance, for acid and alkali protection in chemical plants, and to provide non-toxic protection for tanks used in food processing.

We maintain portable furnaces and crews for treatment of equipment that can not be moved. In cases where it would be necessary to tear down part of the building to get large equipment out, we sand blast, finish and bake these items wherever they may be. The portable heating equipment used has an output of 900° F. at 5000 CFM.

We also maintain a plant for coating equipment that can be conveniently transported. As time has gone on, we have constantly searched for new types of metal protection that would widen our field of usefulness. It was during the early part of the war that we first investigated the low temperature ceramic coatings.

Since then, we have devoted a large part of our time to this type of protection because it filled a need where we were confronted with the problem of metal protection at elevated temperatures. The results obtained have been so gratifying that we have launched an extensive program in the low temperature ceramic field.

From a steak fryer to a cyclatron

During the war we did some very interesting work with the alumina silicate materials (low temperature ceramic coatings). We processed such items as preheaters on bombers, tent hoods for European use, stove

bodies and tops, welding equipment structures, welding pots, etc.

Other interesting applications of the materials have been to control boxes for electrical signs, large steak fryers for hotels and institutions, soldering equipment, and all major parts including gear housing and

steel burner tops for electric hot plates.

We are working out the problems related to coating automobile mufflers, and now have in our plant crank cases for a well known automobile manufacturer. The crank cases are to be given exterior protection of low temperature ceramics. The coatings are ideal in this case, because of high resistance to weathering, abrasion and impact.

In brief, since we started, we have devoted our time to effective metal protection. Prior to the war, proper protection, combined with resistance to elevated heat, had not been developed in the organic type finishes. Based on our experience with the low temperature ceramics, we feel that in the manufacturing of electrical and other items where heat resistance and high dielectric strength are desirable, this type of protection will come into its own.

So far, we have referred particularly to the characteristics such as corrosion, heat, impact and abrasion resistance. As the use of this type of material is broadened through the use of color, many additional fields will undoubtedly be opened. We are anticipating developing a market in the heavy industry field, where processing equipment that can not be moved may be processed on location.

Blasting used for cleaning

Our process in all cases consists of sand blasting with No. 80 to No. 120 grit. This we prefer to chemical etching and cleaning, although it is not so simple or economical to do. Where there are seams or other places where oil or organic material may be deposited, we burn the material out

Editor's Note:

Alumina silicate or "low temperature" ceramic coatings are comparatively new to the ceramic finishing industry. The war increased their use as an answer to problems of heat, corrosion and camouflage. Earlier articles in *finish* provide readers with complete information concerning wartime applications.

It is interesting to observe the possibilities for peacetime application of low temperature coatings as presented by Mr. Risetter in this article.

burners for industrial clothes washers.

The steak fryers referred to are 33" in diameter, and assemble to about 7' in height.

One of the largest installations to which we have applied the low temperature ceramic coatings was a cyclatron. This equipment was 9' in diameter by approximately 16' long, and weighed about two tons. The application was made at the steel fabricators, and baked by our portable equipment. It is our understanding that the temperature used in the operation of this equipment is 900° F., and that high humidity is involved.

We believe that the postwar era will bring manifold applications for low temperature ceramics. At present we are coating tops for the coal section of combination gas and coal ranges, and are in full production on



Left: Spraying steel electrical control boxes with ceramic coating. The boxes are used for outdoor displays.



before blasting to insure clean metal. A mechanical bond is developed, and it is helped appreciably by the sand blasting of the metal.

Quality metal protection requires the best in metal preparation, whether the end use provides for organic or inorganic materials. We have found, contrary to general opinion, that a 90 mesh surface provides better adhesion than a 60 mesh surface. The texture of the blasted surface must be taken into consideration when planning the proper film thickness for the specific job to be coated.

Our equipment for metal cleaning consists of two large sand blast rooms and two booths. One room for tank work is 10' x 10' x 16'. The booths are used for fine work down to 600 mesh. We have 500 CFM for sand blasting.

Having completed by far the most important part of our operation — proper cleaning of the metal surface — we proceed to the coating. In this operation we have found in using the low temperature ceramics that the metal and the coating should be 70° F. to obtain a uniform dense and continuous film. Certain cast iron and brazed parts present problems when the metal temperature is not above 70° F. Metal somewhat above normal room temperature practically eliminates any tendency to flaking.

Spraying technique is important

At first we found difficulty in obtaining the correct spraying technique. It became apparent that a good synthetic spray operator made a poor low temperature ceramic sprayer until he mastered the base dusting and peculiarities in the application of the extremely thin film characteristics of the coatings.

Center: Alumina silicate coating is applied to burner rings for commercial steak fryers.

Bottom: Another section of the seven foot high steak fryer gets its protective coating.



Right: A load of small parts entering the infra-red, gas-fired oven for the baking or "curing" process.

We have found in this, more than in other types of protective coatings, that film thickness for the type of application is most important. Where the coating is to be subjected to elevated temperatures, excessive film thickness is damaging and is inclined to cause flaking in use over 900° F. to 1000° F. If the film is dense and applied at proper thickness over the blasted surface, this operating temperature can be handled successfully over long periods of time.

Extremely thin, one-coat application is therefore used where heat resistance is of first importance. On the other hand, where resistance to corrosion, abrasion or dielectric strength is important, a two-coat application, with considerably greater total thickness, is employed.

Two cycle baking used

Our third operation is the baking or "curing" which is accomplished in two heating cycles. The first is at 200° F., for 15 minutes; the second at 740° for one hour. Some low temperature ceramics cure at 350° F. for one hour. However, the same prebake is applicable. The one hour period is flexible on the up side, depending on the amount and thickness of metal in the oven—in other words, the oven load.

The alumina silicate or low temperature ceramic coatings are, of course, comparatively new, but we have had sufficient experience in their use to feel that they offer a solution to many problems which to date we have not been able to solve with organic materials. They also seem to offer a logical bridge for the gap between organic finishes and high temperature ceramic coatings.

Center: A typical heavy casting to which the low-temperature coating has been applied.

Bottom: Cast iron stove tops for combination coal-gas ranges and steel burner tops for electric hot-plates.



The sheet steel situation

the current situation and future prospects for sheet steel users

By *Norman W. Foy* • GENERAL MANAGER OF SALES, REPUBLIC STEEL CORPORATION,
CLEVELAND, OHIO

DOZENS of times a day we are asked by some steel user who appeals to us in desperation, "Where is all the steel going?" This is a difficult question for which there is no pat answer, but I will try to give you an outline of the situation as we see it. If you will bear with me I should like to review a little history.

Over the past 25 years the consumption of sheets and strip has steadily risen in relation to other steel products. There were 149 tons of sheet and strip produced for each thousand tons of other products in 1920. In 1940 there were 402 tons of sheet and strip for each thousand tons of other products. It must be kept in mind that from 1926 to 1940 there was very little overall growth in the total production capacity for steel, and this rapid expansion in flat-rolled output was therefore at the expense of other steel products.

The increase in flat-rolled production was made possible by the advent of the continuous mills, the first of which was built about 1926. When our own 98" mill in Cleveland was ready for production in 1937, it was freely predicted that we and other producers would never be able to find enough tonnage to operate mills of such capacity profitably. Today we could use another one just like it if we had the steel ingot capacity to supply it.

It is well to point out here that while the continuous mills provided a steadily increasing capacity for flat-rolled steel during the 15 years preceding the war, their very magnitude prevents any rapid expansion in rolling facilities at the present time. Such a mill, with its supplementary equipment, represents an investment of 20 to 35 million dollars, depend-

ing on size, and requires a minimum of two years to build.

The disappearing hand mills

As the number of continuous mills increased, the old type hand mills began to fade from the picture at an accelerating rate. We had a number of them ourselves which have been abandoned. As recently as 1935 there were 594 hand mills in operation.

Editor's Note:

There has been much speculation concerning the actual situation with regard to sheet steel production and the possible affects of recent developments on future prospects for steel production.

finish presents the opinion of a man who has had experience on "both sides of the fence" in his position with Republic Steel and as Director, Steel Division of the W. P. B.

Today there are 199 hand mills still listed as active, but many of them have not operated for some time and may never resume.

The loss of this hand mill production is particularly painful at the present time. Many of our customers point out that they never used steel in the grades and finishes produced by the hand mills and therefore feel that they should not be affected by their discontinuance. They overlook the fact that a large tonnage of the sheets produced for galvanizing by the hand mills must now come from the continuous mills in the form of cold-rolled sheets. This directly affects the tonnage available for cold-rolled sheet customers. The situation is further complicated by the withdrawal of some steel companies from production of galvanized sheets and other flat-rolled products.

When the war came along, total

flat-rolled production had built up from 4¾ million tons in 1920 to 14 million tons in 1940, largely through the advent of the continuous mills, as mentioned before. In the early war years, however, there was relatively little need for light flat-rolled steel, which dropped to 15% of normal, while the demand for ship plates was insatiable. Many of the continuous mills were converted for the production of plate and turned in an amazing performance. Plate production on the continuous mills reached 500,000 tons per month and literally saved our shipbuilding program.

The manpower problem

But far fewer men were needed to produce ship plates. During this period it required 950 men per day on our 98" mill for the plate operation, while the lighter and more varied peace-time production requires 1650 men per day. We lost a large part of our skilled organization, as did other mills under similar circumstances. The difficulty of rebuilding such an organization and the extended training period required is one of the reasons that flat-rolled production figures have been somewhat disappointing since the end of the war.

Then there is the huge tonnage lost during the strike. While the strike lasted only four weeks, we have lost from six to eight weeks' output due to the complications involved in starting operations after a complete shut-down. 1946 will, therefore, be a ten months year at best insofar as sheet production is concerned.

People remind us, when we point out our inability to accept more tonnage, that steel capacity was expanded by 15 million tons during the war and they can't understand the present situation. The fact is that there was

to Page 48 →

The use of architectural porcelain enamel

a review of early mistakes, a plea for close cooperation
with architects and a picture of an expanded market

By *Mark van der Kloet* • MANAGER OF ENGINEERING AND CONSTRUCTION,
THE ERIE ENAMELING COMPANY, ERIE, PA.

AS a general rule, a new building material is introduced to architects, contractors and the general public after lengthy tests in research laboratories and material development departments. These introductions usually include extensive advertising in technical magazines and the press, exhibitions, demonstrations, the issuance of attractive literature describing the virtues and the applications of the new product, and employing all the showmanship of the sales promotion departments.

Often large amounts of money are made available for this promotional work, and every effort is made to acquaint the architectural profession with the new product and its applications.

Frequently design contests, with handsome prizes, are staged to attract the interest of the architect in the new material, to let him use his imagination and skill to develop new practical or theoretical applications of the product, and to obtain wide indirect publicity without the coldness of plain commercial advertising.

The result of such sales promotion work is that within a short period of time architects and potential purchasers are well acquainted with the new product.

Such methods of introduction were not used when architectural porcelain enamel made its first appearance fifteen or eighteen years ago. No thorough study was made of the possibilities for the application of this new product. No prominent architects were engaged to assist in fitting the new material into well designed structures, and no extensive advertising or sales promotion programs were undertaken.

No large national corporation with ample funds for extensive sales pro-

motion was connected with the early development of architectural porcelain enamel.

No immediate attempts were made to apply the new material to buildings of artistic design or to obtain attractive color combinations, and the early applications had all the earmarks of an amateurish development.

"... buildings of the hot dog stand classification"

The early installations of architectural porcelain enamel were indeed a far cry from perfection. Thin, wavy sheets of porcelain enamel, without flanges or protection of the joints against the elements, were fastened with nails or screws to the outside walls of small buildings of the hot dog stand classifications.

It is not surprising that very few architects showed any enthusiasm over the new product. That was a poor start and an example of unfortunate introduction of a material with excellent qualities; for the good qualities of porcelain enamel had already been recognized in its application to kitchen stoves, refrigerators, washing machines, table tops and other useful articles.

The poor start in the application of architectural porcelain enamel has been a great handicap in the development and acceptance of this product for, until a few years ago, most architects frowned upon porcelain enamel applications—they were still under the influence of the memories of horribly colored, buckling sheets, covered with rusty streaks from corroding nails or screws.

"... Porcelain enamel an important building material"

The improvements of enameling processes, basic materials, engineer-

ing of the units and methods of application have made architectural porcelain enamel an important building material, which value, oddly enough, has been recognized and accepted mostly by non-members of the architectural profession. Owners of highway restaurants, gasoline filling stations, theatres and stores, whose volume of business depends a great deal on the attractive, clean appearance of their places of business, recognized the value and economy of this material and became the principal users of this product.

Many buildings with porcelain enamel installations which are in existence today were constructed without the benefit of the services of an architect, and many of these buildings do not meet architects' professional standards of beauty in design.

Probably this is the principal reason why many architects shy away from porcelain enamel without further investigation of the value of the product.

Even at the present time the majority of architects know little or nothing about present day architectural porcelain enamel, about its merits, its application methods or its possibilities as a building material.

The noteworthy examples of the use of porcelain enamel, done by some of the foremost architects in the country, are not yet numerous enough and not well enough known to overcome the general attitude of disinterest on the part of the architectural profession as a whole.

"... companies are advised by capable architects"

In pre-war days extensive use of the material was made in the construction of service stations for the major oil companies. This is signifi-



This modern, attractive Gulf station illustrates the use of porcelain enamel by the large oil companies.

cant, for the oil companies, with programs of constructing hundreds of identical buildings, are extremely cautious in selecting building materials which are attractive, durable, economical and practical in application, and suitable for low maintenance. These companies are advised by capable architects in order to obtain architecturally correct designs and suitable materials for their buildings. There is no doubt that in the immediate future architectural porcelain enamel will again be used extensively in the construction of restaurants, service stations, store fronts, theatres, and automobile sales buildings—but these structures will be of greatly improved design, since the services of registered architects in the development of these designs has become more prevalent.

It is also quite evident that porcelain enamel immediately will find greater use in many other types of buildings which heretofore were constructed of other materials. Bus terminals, airport buildings and railroad stations are only a few examples.

"... almost unlimited possibilities exist"

During the next few years, when scarcity of building materials may prevent many from erecting new

buildings, porcelain enamel will prove very helpful in modernizing existing structures. In the more distant future almost unlimited possibilities exist for the application of this material.

The extent to which this material will be used for architectural purposes does not depend any longer on the technical ability of the enamellers to produce a good product. The enameler can successfully fuse porcelain enamel to almost any unit of enameling steel, regardless of shape, color and size. The future of architectural porcelain enamel depends almost entirely on the degree of understanding and cooperation which will be established between architect and fabricator. The manufacturers understand that it is essential to supply the architect with extensive and complete information and data of their product in order that the architect shall:

1. Realize the merits and the limitations of the product.
2. Have a general knowledge of fabrication and enameling processes.
3. Be familiar with the proper application methods.
4. Have product specifications available to incorporate in the general specifications.
5. Have sufficient data available

to prepare preliminary estimates of costs.

Among the merits of the material is the advantage of flexibility of design, allowing the architect freedom of expression. Flat or curved surfaces, square or rounded coping panels, projections or offsets of any desired dimensions can be included in the design, and the embossing or decorative coloring of panels permits unlimited artistic treatment.

"... masonry, steel or frame structures"

Excellent results in design can be obtained without the aid of auxiliary materials. The material is durable, weather resistant, free from cracking or breaking and can be applied to any kind of masonry, steel or frame structures.

In many instances considerable delay in time of construction can be avoided through prefabrication of the porcelain enameled panels, providing the building is erected within normal building tolerances of certain key dimensions shown on the architect's plans. The necessity of field measuring of the substructure before detailing and fabrication of the porcelain enamel can be started is avoidable when the architect and contractor are

to Page 52 →

Dry process enameling practice

a three part article containing elementary information on the manufacture and application of dry process enamels and suggestions for the control of processing defects

By *W. J. Baldwin* • TITANIUM ALLOY MFG. CO., NIAGARA FALLS, N. Y.

PART 1 • Frit Manufacture



Manufacturers of dry process enameled goods such as bath tubs, sinks, etc., whose operations were greatly curtailed during the war due to lack of raw materials and government restriction, are again turning their attention to the manufacture of those products so vitally needed in this post-war period.

In many of these plants, enameling operations were not carried on during the war, with the result that trained personnel, an important factor in dry process enameling, had to refresh itself on the various procedures in the enameling operations that are essential in producing quality ware.

It is not intended that the following information on dry process enameling will be in any manner comparable to the many ideas and innovations that would result from a gathering of the dry process enamellers, but it is offered with the hope that some of the points may be of value. Many of the points discussed are well known, but are offered here as a brief refresher course.

Dry process enameling may be described briefly as follows: The enamel frit is dry milled to a definite screen size and the resulting enamel powder is applied by dusting on the hot casting which has a very thin ground coat. The firing temperatures vary from 1650° F. to 1800° F. Usually two or three dustings or coats of enamel are applied, each application of the enamel powder being fired down to a smooth finish. The quality and finish of the final piece of ware is entirely dependent upon the enameler since no further work can be

done on the enameled casting after it has been set aside and cooled.

The preparation of the frit and the enamel powder require extreme care. Control of the various processes is important, and only through close control can quality ware be produced. Cleanliness throughout all operations is essential. Emphasis upon control and cleanliness can not be too strongly stated.

Frit composition

Most dry process enameling plants produce their own frits, chiefly because it permits utilization of the scrap powder from the dusting operations. Such powder is usually added to the raw batch of chemicals at a definite percentage, the composition of the raw batch being adjusted to compensate for the addition of the smelted material. Typical compositions as used in the dry process industry are included in the accompanying table.

Four steps in frit manufacture

Frit manufacture may well be sub-

divided into four important steps, each of which should be given due consideration. These steps are:

1. Mixing
2. Smelting
3. Fritting, and
4. Drying and Storage of the frit.

Mixing

The mixing department, where the raw frit batches are weighed and mixed, should be isolated from the smelting department and mill room to avoid contamination of the raw materials in the finished frit or enamel powder. The results of such contamination are discussed later. The storage of the raw materials will, of course, depend upon the facilities available.

Where no bin facilities are available, the raw materials are usually kept in the containers, barrels or bags in which they are packed. Materials similar in appearance, such as feldspar and quartz, should not be placed next to each other, but separated by one or more dissimilar materials.

Typical compositions for dry process enamels

	Ground Coat	Regular Enamel	A.R. Enamel
Feldspar	45.0	31.7	—
Dehydrated Borax	21.0	16.2	—
Quartz	30.0	3.0	36.0
Litharge	4.0	—	—
Fluorspar	—	8.0	—
Calcium Carbonate	—	1.4	4.1
Nitrate of Soda	—	3.8	7.4
Sodium Antimonate	—	11.4	8.7
Cryolite	—	1.5	—
Zinc Oxide	—	10.7	—
Barium Carbonate	—	6.3	—
Red Lead	—	—	12.5
Hydrated Borax	—	—	8.4
Soda Ash	—	—	14.9
Titanium Oxide	—	—	6.0
Sodium Silico Fluoride.....	—	—	2.0

proper identification of each chemical will be plainly visible with designated areas marked off for such chemicals.

The scales used for weighing the raw materials should be cleaned frequently during the mixing period and checks made periodically on the accuracy of the scale.

Careful control should be exercised in weighing the raw materials used and in the mixing of the raw batch. In most plants, some type of mechanical mixer is used for mixing of the raw batch, and with such mixers a definite time for mixing is maintained. It is essential that the mixed batch contain no large lumps of raw material, and in the event that this occurs, the raw material is pulverized and screened before mixing.

Batches containing titanium oxide often give trouble due to the tendency of the oxide to "ball up." If this "balling up" is not eliminated, reduction of some of the material results in the smelting forming gray to grayish black particles in the frit. These particles, unless picked out, will result in dirty powder. In some instances this trouble is eliminated by premilling the titanium oxide with part of the silica and soda ash in the batch. Pulverizing the titanium oxide before adding to the mixer has been also found effective. The use of sodium titanium silicate added as a batch ingredient is an effective means of eliminating this defect.

The addition of the scrap powder to the batch should only be made after it has been screened to remove all foreign materials. In some instances passing the scrap powder over a magnetic separator before using it in the batch has been considered a good practice.

Smelting

The smelting of the mixed raw batch to produce the enamel frit is an important step and requires careful consideration. Many of the defects that are developed in the fired enamel can often be traced to the smelting operation. In plants where smelters have been idle during the war, the linings should be carefully checked



The "fritting" shatters the molten glass into friable particles.

and repairs made where necessary. The burners, likewise, should be overhauled and placed in first class condition.

Those smelters that have been idle and found to be in good condition should be thoroughly cleaned by smelting several batches of scrap powder or frit to which has been added 5-10 per cent borax. These batches should be smelted until quite fluid and the melted glass stirred so that all sections of the smelter bottom are thoroughly contacted. After this cleansing, the regular frit can be made, although the first batch produced should not be used for powder making due to possible contamination from the wash. This batch can be utilized, however, by adding to the following smelts, using from 5-10 per cent.

A maximum smelting temperature for each frit is maintained and rigidly adhered to. Stirring of the batch in the box type smelter is done at regular intervals and the tools used for such practice should be non-scaling to avoid scale contamination in the melted glass. With the rotary type of smelter, stirring of the batch is accomplished by the action of the smelter, but if tools are used for removing the last traces of glass from the discharge port, these tools should be of the non-scaling type. With the rotary type of smelter, an accumula-

tion of sintered raw material often occurs at the discharge port which, unless removed, will cause contamination of the frit. Such frit, when ground, will oftentimes result in an enamel powder that produces a pitty or "nitty" finish.

It is the duty of the smelting department foreman to decide when a smelt is ready to be discharged, and such tests as smoothness of a fine string of the glass, freedom from pits on the stirring rod sample, and opacity are considered. No set rules can be given because of variations in frit compositions, but the tests as given are usually made in most frit making departments. When the smelt is ready to discharge, the clay plug or other device used for blocking the tap hole on the box type smelter is removed and the glass allowed to flow into the quenching tank. Small particles of clay and refractory from the plug are caught in a shovel with the first part of the molten glass and discarded.

Fritting

This operation has been made a separate item from the smelting because it is felt that in some instances contamination occurs in the fritting, and a brief explanation is in order. The main purpose of fritting is to shatter the molten glass into friable particles so that milling is facilitated.



This operation is "pouring" molten iron to form a cast iron bathtub.

PHOTOS COURTESY ELJER COMPANY

Too often this step is not given sufficient thought, and with dry process enamels it can be the cause for defects in the finished enamel powder.

It is the practice in some shops to fill the quenching tanks with water immediately after the previous lot of frit has been removed. This procedure leads to defects since dirt and raw material from the smelting operations tend to settle on the water in the tank and thereby contaminate the next batch of frit discharged. The best practice is to flush out the quenching tank thoroughly prior to discharging the melt, allowing sufficient time to fill the tank with fresh water just before the batch is discharged.

The water in the tank should be overflowing when the glass is fritted. By this means, contamination of the frit at this stage by dirt and raw material is reduced to a minimum. In some plants the glass is fritted in a monel metal basket which sets in a quenching tank. This method permits lifting the basket containing the frit from the water with subsequent washing of the frit if desired, after which it is allowed to drain thoroughly before going to the dryer.

Drying and storage of the frit

Drying facilities will depend to a large extent upon the frit production. In some instances, large stainless steel

trays, heated by an open burner, are used for drying the frit. When this method of drying is used, a cover is provided for the tray in order that no contamination occurs at this point. Vents are provided in the cover to allow the steam formed to escape.

The use of a rotary dryer, where production warrants its use, provides a good method. With the rotary type of dryer, it is possible to screen out oversize pieces of frit which were not thoroughly broken up in the

quenching by placing a screen of suitable size at the discharge end. Such screening can be done by hand with the tray method of drying, but this involves considerable labor.

Where the frit is quenched in a basket, another method of drying can be used. In this instance, the basket containing the frit can be placed directly over a dryer built to accommodate the basket. Discharging of the dry frit from the basket is accomplished through a sliding door in one side.

The storage of the dried frit is a matter of space and/or plant practice. If careful control has been exercised and uniformly clean frit produced, it would seem to be logical to store the frit directly in large bins or hoppers. This practice is not advisable, however, since one lot of frit which is off standard or dirty can thus contaminate the balance of the frit. For this reason, it is not the best practice to store the finished frit in large bins, but rather to bag the frit and store it in this fashion. The bags should be marked with the number of the frit, the number of the smelt, and the date so that if any difficulties should be noted with the enamel powder resulting from such frit, a check can be made as to its source.

Part II—Milling and enameling

Castings are hung on the racks of an automatic machine which blasts them with steel pellets prior to enameling.





Right: F. C. Woleslagle, Carnegie-Illinois Steel Corp., listens attentively following his presentation of "Preview of Future Markets for Porcelain Enamel."



Top left: Tappan Stove's Jim LeMunyon, and McGean Chemical's Bob Loudon enjoy themselves at the dinner.

An "over-the-shoulder" shot catches Frank Thomas, vice president and secretary of Porcelain Steel Corp., Connersville, Ind.



Porcelain Enamel Institute managing director, Edward Mackasek, relaxes as he enjoys the proceedings.



"Dinty" Moore, Newark Stove; Ed Campbell, Ing-Rich; Ralph Andrews, Newark Stove (newly elected vice president); and Jerry Miller, Ing-Rich.

Central District Enamelers Club holds second dinner meeting

FOR the second time since the war ended the Central District Enamelers Club held a highly successful meeting at the Hollenden Hotel in Cleveland. This second dinner meeting was held Friday, March 29, and again over one hundred enamelers were in attendance for the dinner, and an even greater number for the business meeting and program. Norman H. Stolte, Enamel Products Company, retiring president, presided.

Preview of future markets

The first paper, presented by F. C. Woleslagle, Carnegie-Illinois Steel Corporation, was entitled "Preview of Future Markets for Porcelain Enamel." Mr. Woleslagle presented a wealth of data based on market research work conducted by the Market Research Committee of the Porcelain Enamel Institute, and gave the Central Enamelers a picture of unprecedented volume requirements in the various fields where porcelain enamel is used. At the conclusion of his paper, the speaker distributed reprints of an illustrated feature article in *finish*. (See "Preview of the Future Market for Porcelain Enamel," by F. C. Woleslagle, page 31, December, 1945 *finish*.)

Control instruments

The second paper on the program was presented by L. G. Simon, Harshaw Chemical Company, and was entitled "New Control Instruments and Methods." This paper described in detail a wide variety of instruments



Left: L. G. Simon, Harshaw Chemical, delivers his paper, "New Control Instruments and Methods."



Top right: "The gang's all here" from Strong Mfg. Co., Sebring, Ohio. Seated: Elliott Aydelott, Allen Schapter and Fred Menges. Standing: Paul Cecil, Tom Butler and Clifford Trimmer.

Enamelers Club Cleveland meeting

for development, testing and control work, many of which are comparatively new to our industry. To illustrate the detailed descriptive paper, arrangements had been made to have all except the very largest of the instruments on display. Each piece of equipment was spotlighted at the appropriate time, and all were available for examination and discussion following the meeting.

New officers elected

Following a report of the nominating committee, headed by Claude Cleghon, Clyde Porcelain Steel Corporation, the following officers were unanimously elected for the ensuing year: President, Dan Meeker, The Toledo Porcelain Enamel Products Co.; First Vice President and Chairman of the Program Committee, Dan Gredys, Perfection Stove Company; Vice President, Ralph Andrews, Newark Stove Company; and Secretary and Treasurer, Franklin (Deke) Bond, Ferro Enamel Corporation.

An enthusiastic vote of thanks was extended to the retiring president and temporary officers who had the responsibility of "rejuvenating" the Central District Club following the lapse of its activity during the war. From all indications, the Club is entirely "rejuvenated" and is well on its way to a bigger and better program of activity.

Information on later meetings of the Club will be published upon release by the new officers and committee chairmen.



Dan Gredys, Perfection Stove Co., was elected as first vice president and chairman of the program committee.



This comfortable pose shows Ed Hansen, Ferro Enamel, who it is understood is slated for a top office in the A.C.S.



Alliance Ware, Inc., is well represented by W. C. Seiple, R. L. Speer, P. Snively, Wm. Morrison and H. L. Rodgers, general superintendent.

PORCELAIN ENAMEL



The familiar finish that millions of consumers DEMAND!

The overwhelming consumer demand for porcelain enamel finishes was clearly shown by a recent survey among furniture retailers and manufacturers. Here are the figures:

100% of the retailers reported they expected Porcelain Enamel to be the most popular finish on breakfast sets, table tops, etc.

80% planned to feature the term PORCELAIN ENAMEL in their advertising.

79% reported they would actively promote Porcelain Enamel.

And 98% said their customers for breakfast sets, tables, etc., were asking for Porcelain Enamel.

Use these facts to promote the sale of your products. Use the colorful beauty and durability of porcelain enamel to make your retail selling easier.



Here is a practical home workroom—for which Mr. and Mrs. Consumer should be sold products with the lifetime *Porcelain Enamel Finish*. For instance: 1. Laundry Trays 2. Washer 3. Ironer 4. Shower 5. Furnace Casing 6. Work

Table 7. Storage Cabinets 8. Frozen Food Cabinet 9. Hot Water Heater 10. Water Softener 11. Venetian Shades 12. Fluorescent Lights • and the modern home will have a Porcelain Enamel Flue for greater efficiency and economy.

Call on the Porcelain Enamel Institute for constructive design and fabrication assistance in adapting Porcelain Enamel—*The Lifetime Finish*—to your products.



PORCELAIN ENAMEL INSTITUTE

1010 VERMONT AVE., N. W.

Washington 5, D. C.

The Washington round-up

By Wilfrid Redmond

INDUSTRIAL production continues to be blighted by labor strife, although an early settlement of the coal strike would allow present gains in the industrial index, as a result of the upturn in mid-March, to be preserved. Expenditures for consumer goods in January were 10% above last year and an even larger increase for February is contained in preliminary reports by the Civilian Production Administration. The steel strike during the first three weeks of February cut steel production to about 6% of normal, adversely affecting production of automobiles, machinery, consumer durable goods and other steel consuming items. A sharp rise in the index, which dropped to 154 before March 1, should result in the coming weeks, if coal remains available for industry.

While the high level of activity in basic materials production is a good sign, the production of consumer durable goods, the commodities which sop up buying power, has been lagging and still is, the CPA report states.

Washing machines

Domestic laundry equipment nearly doubled its shipments in January over December. An estimated 171,000 moved out of factories in the first month of 1946 compared to the 99,000 in December. In fact, the January total represented 108% of the prewar average rate of 158,000 units per month. The large increase is the direct result of an unusual volume of shipments due to an accumulation of almost completed units waiting for needed components. Difficulty in obtaining steel items, tubs and enameling stock are expected to slow up February shipments. Shortages in electric cord sets, switches and rubber wringers are also present bottleneck items.

Refrigerators

Revised figures on domestic mechanical refrigerators indicate that approximately 123,000 units were shipped in the month of January,

which is about equal to December output but only 39% of the 309,000 produced in an average prewar base month. Several of the large producers made no shipments after January 15 due to strike conditions in the plants. Shipments in February are expected to be lower than January, CPA reports, due to difficulties in obtaining steel and components, and strikes within the industry.

Electric ranges

A slight drop in January totals of shipments showed that the 25,000 units in that month were 4,000 below the December shipments. January totals were about half of the prewar monthly average of 47,000 units.

Housing

An important change in the housing and construction field took place on March 26, when CPA passed its restrictive housing bill, called Veterans Housing Program Order 1, effective immediately. It forbids new construction or repairs or changes in existing buildings in the United States, Puerto Rico and the Virgin Islands without specific governmental authorization. The order does not stop work already started, where materials are at the site, or incorporated into the structure. The Emergency Housing bill for veterans, sponsored by the Veterans Administration, calls for 2,700,000 new homes for former soldiers by the end of 1947. Of this number about one-third, or 85,000 units, will be prefabricated. The bill is going through the Senate, preserving most of the Administration's "musts" intact.

Under the CPA regulation, which has been called more stringent than the well known L-41, construction jobs for which preference rating of HH have been issued, may go forward. Also exempted is certain repair and maintenance work in industrial, utility and transportation structures unless such work is capitalized.

The order also exempts low cost

construction work which does not exceed the allowance listed below for particular classes of structures.

	Cost Per Job
House (one to five families)	\$ 400
Hotel, apartment house (over five families)	1,000
Commercial office, store, theatre, etc.	1,000
Farm (excluding farmhouse)	1,000
Church, hospital, public building....	1,000
Industrial factory, plant, etc.	15,000
Other	200

The purpose of VHP Order No. 1 is to divert scarce building materials away from less essential and deferrable projects into the construction of homes for veterans. It is planned to cut the 1946 construction program to \$14 billion, and lop off an estimated \$2 billion during the next 12 months. The CPA asks for legislative authority to make available the use of the wartime techniques for increasing the production of building materials. A set-up of citizens, to be formed into Committees in 71 cities, will work with CPA Construction field offices to process housing applications.

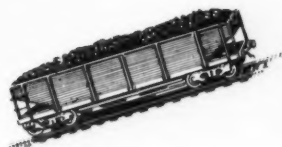
Construction expanded contraseasonally from November to February, and the rapid expansion is still continuing. Total new private construction expenditures were \$462 million in February as against \$417 million in January, \$368 million in December and \$118 million a year ago. The sharp rise in industrial and commercial has given away in 1946 to a greater emphasis on residential building. Approximately 40,000 non-farm dwelling units were started in February as against 29,000 in December.

Decontrol

The Office of Price Administration made the news with two concessions for heavy machinery and equipment items, and on a list of minor consumer goods. Called the most important and extensive decontrol action yet taken by the OPA, the new arrangement frees machinery and equipment in a selected list covering six broad classes of goods, such as electrical equipment, machine tools, processing, construction, transportation and miscellaneous types of machinery. The OPA stated that this action, and the one taken for smaller consumer com-

to Page 46 →

FROM STOVE PIPES TO COAL CARS



KAYKOTED metal products are preserved from rust economically whether they weigh one pound or ten tons or more.
Some of the products which will benefit by being KAYKOTED are:



Air-Conditioning Conduits
Automobile Exhaust Pipes
Cement Building Blocks
Metal Roofing Shingles
Radio Parts Chests
Transformer Cases
Ammunition Boxes
Aircraft Heaters
Steel Coal Cars
Metal Siding
Gas Heaters
Pipe Lines
Manifolds
Ash Cans
Pottery
Stoves
Tile

- ECONOMICAL
- DURABLE
- INORGANIC

We invite metal products manufacturers to submit articles to our laboratory to be KAYKOTED and returned to them with a complete report. Laboratory samples should not be larger than 12" x 12" x 48".



KAYKOTE DIVISION, KRAUS RESEARCH LABORATORIES, SPARKS, MD.

West Coast Distributor . . . INDUSTRIAL COATINGS COMPANY • 4831 Goodwin • Los Angeles 28, California • Tel. Chapman 5-2693

NEWS

V. A. Nagelvoort, President of the Renown Stove Company, emphasizes the addition of Charles H. Kenitz to the organization.

New Renown Stove vice president

Earl McGee was named a vice president of the Renown Stove Company at the annual meetings of the directors and shareholders, according to an announcement by B. A. Nagelvoort, president of the company.

Mr. McGee has been works manager for the company for the past two years, and will continue in charge of all production operations.

All other officers were re-elected by the board of Directors. They are: B. A. Nagelvoort, president; Mayor J. Edwin Ellis, honorary president; Millard H. Pryor, of Mansfield, Ohio, vice president; Walter C. Howe, secretary and treasurer; and Frank W. Rayen, assistant treasurer.

At the stockholders' meeting all directors of the company were re-elected. In addition to the officials named previously, the board includes Taine G. McDougal, of Flint, vice president of the AC Spark Plug Company; M. H. Waterman, of Ann Arbor, professor of finance in the University of Michigan School of Business Administration; and Earl S. Wolaver, of Ann Arbor, professor of business law in the School of Business Administration at the University.

Seeger-Sunbeam reopens plant after shutdown

A report dated April 5 states that the Evansville Division of the Seeger-Sunbeam Corporation, makers of the Coldspot refrigerator for Sears, Roebuck and Company, has now reopened after a shutdown of nine weeks due to material shortages.

Extensive reconversion instituted by the new corporation for the fabrication of a new mechanical unit, said to incorporate the latest improvements in modern refrigeration, has now been completed. According to the report, improved processing techniques have been added to the manufacturing facilities and an accelerated program of product development instituted in the research and development laboratory.

Kenitz new production manager at Edison GE



H. E. Kenitz has been appointed manager of manufacturing, Edison General Electric (Hotpoint) Appliance co., according to R. W. Turnbull, president. He has been with the company since 1925 as superintendent in the company's several plants and later, until the present, general superintendent. "Hek" will have complete charge of all of the

company's manufacturing operations.

Pemco appoints new sales promotion manager

Pemco Corporation has announced the appointment of Mr. Howard N. Williams as Sales Promotion Manager. Mr. Williams attended the School of Engineering and the School of Marketing and Advertising at the University of Baltimore. During the war he was associated with the Navy Department as a Field Engineer and the Glenn L. Martin Company as Chief of their Instrument Laboratory doing research and experimental work for the government. During the past few years while working in the advertising and promotions field, he has been associated with the Manufacturers Record Publishing Company as promotion manager, Southern Advertising Agency as copy chief and account executive, and the American Opera Magazine as business-advertising manager. Within the past month he has completed a market analysis and city survey for a national publication. He succeeds Mr. William B. Rose who has accepted a position with an advertising agency located in Baltimore.

Ross Purdy honored by ACS Pittsburgh Section

Approximately 200 members and guests of the Pittsburgh Section of the American Ceramic Society met at the Pittsburgh University Club on Tuesday night, March 12, to honor their national officers — and particularly Ross C. Purdy, national secretary. Highlight of the evening was the presentation of a handsomely inscribed testimonial folio to Dr. Purdy, and his responsive remarks covering twenty-five years of the Society's history.

Dr. A. Paul Thompson, Mellon Institute, chairman of the Section, opened the meeting and introduced Harold E. Simpson, also of Mellon Institute, who acted as toastmaster.

After introducing out-of-town guests, returned service men, and the national officers, Toastmaster Simpson told something of the guest of honor's background and work. Dr. Purdy, said Mr. Simpson, went from

Buffalo, New York, to Ohio State University for two years. He gained experience on industrial jobs, and then established the Department of Ceramic Engineering at the University of Illinois in 1905. Ross, he said, was assistant professor at Ohio State in 1907 when that department granted him his own degree. He then continued industrial work and became director of research for the Norton Company before becoming general secretary of the A.C.S. in 1922. "... The remarkable growth and development of the Society since then is a matter of record and a tribute to the services, distinguished as they are by devotion, unselfishness and loyalty."

Among those of the local committee for the meeting were a number of men well known in enameling circles — Raymond E. Birch, Harbison-Walker Refractories Co.; Ernest M. Hommel, O. Hommel Co.; Jack F. Hunt, Orefracation, Inc.; and E. E. Marbaker, Mellon Institute.

Roper official honored by War Department

L. R. Jensen, general superintendent of the Geo. D. Roper Corporation, has been awarded a War Department Certificate of Appreciation for his work on the Industrial Integration Committee in charge of wartime development and production of ammunition.

The award was conferred by Brigadier General R. E. Hardy, to whom all integration committees were responsible. Mr. Jensen headed the seventy-odd industrial keymen who made up the group when he was chosen as assistant chairman, highest committee office to be held by a civilian, under General A. H. Campbell, Jr., Chief of Army Ordnance, chairman.

Home service used by Chicago utility in promotion plan

The Peoples Gas Light and Coke Company of Chicago has developed an integrated home service activity into an important and successful phase of its current promotion plan. Under the pen name of "Martha

Holmes," Elizabeth J. Lynahan directs the home service program.

One of the most productive efforts is a continuing series of cooking demonstrations presented by "Martha Holmes" in the Company's home service auditorium — a feature to which admission is by ticket only as a result of over-capacity turnouts. A new note has been added in the allocation of fifteen minutes of each program to Harry Swenson, director of the Home Planning Bureau, who gives actual demonstrations on color schemes and kitchen arrangements.

Locke Insulator Corporation announces the addition of James M. Brady to its New York office.

Brady served with the Seabees from May, 1943, until November, 1945. Before entering the Armed Forces he was with E. B. Latham and Company, and with Nash Kelvinator Corporation.

Howard Wolf returns to Mullins

Following his discharge from the Army, Howard Wolf (See "The Effect of War Production on Metal Stamping Technique," by Capt. Howard Wolf, May, 1945, *finish*) has returned to Mullins Manufacturing Corporation, where he is conducting a survey of new product developments and markets for the company.

Howard had a mishap in Frankfurt, Germany, when he got "mixed up with a jeep," and ended up with a fractured skull. He returned to the United States in September, was hospitalized in Louisville, and later spent some time recuperating in Florida. Following 47 months in the Army, he is again in civilian clothes and back with Mullins.

New chief engineer

at Youngstown Sheet & Tube

Albert J. Hulse has joined The Youngstown Sheet and Tube Company as chief engineer. He succeeds J. D. Jones, who left the company about a year ago.

Hulse went to the Youngstown district in 1925 as chief draftsman for Trumbull Steel Company in Warren.

Later, he became assistant chief engi-

neer for the H. A. Brassert Company, consulting engineers of Chicago.

In 1935, he went with Carnegie-Illinois Steel Corporation as assistant chief engineer at their South Chicago Works, and was later appointed chief engineer. A few weeks before Pearl Harbor, he was transferred to Columbia Steel Company as chief engineer on the construction of the Geneva Steel Works for the U. S. Government at Provo, Utah, the largest of wartime steel expansion projects. Upon completion of the Geneva project, he returned to Carnegie-Illinois as senior staff engineer in the Pittsburgh Office.

Evans joins Consolidated Vultee



W. R. Lawrence, division manager at the Nashville, Tennessee, plant of Consolidated Vultee Aircraft Corporation, has announced the appointment of Reece B. Evans as general foreman of the Processing Section of their new Appliance Factory.

Evans, who for the past eighteen years has been with the Cleveland Tennessee Enamel Company, in his new position at "Convair," will be in charge of their new, modern, two continuous furnace enameling plant.

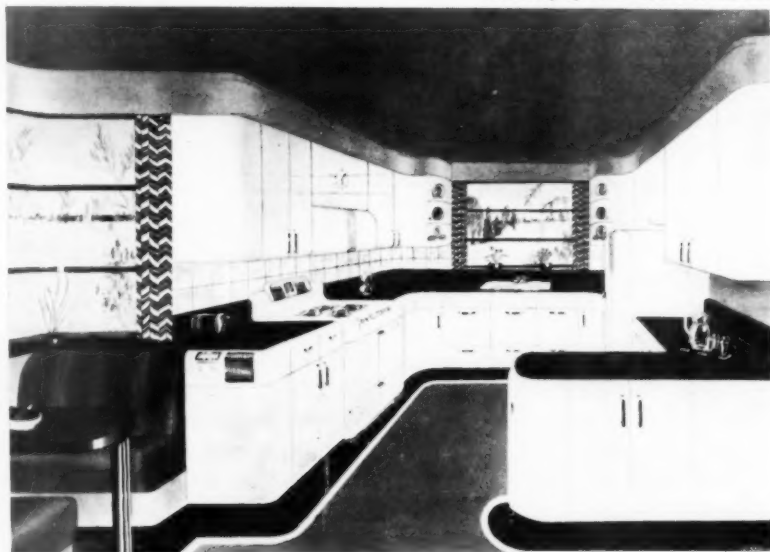
The company's new factory, which is to make gas and electric ranges, as well as home freezers, will have all mechanized handling equipment and pressurized, filtered air spray lines, including ground coat. The pickling will be fully automatic.

Evans was born in Jacksonville, Florida; graduated from elementary

to Page 32 →



Courtesy of General Electric Co.



Courtesy of Cribben & Sexton Co.

Courtesy of Hardwick Stove Co.



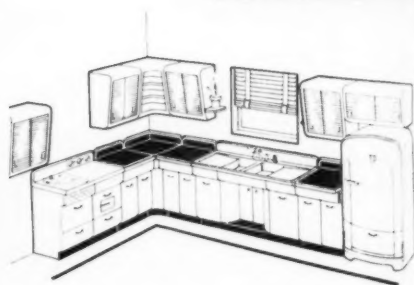
THE KITCHEN

Leading producers of kitchen appliances in collaboration with prominent home economists and women's magazine editors have evolved one of the day's most modern merchandising programs.

No longer need a housewife fear the prospect of 1500 sessions yearly (Yes, that is the average) in a drab inefficient kitchen. Her kitchen, today, can be an inviting integral part of the home. Thru material arrangement as a result of job study, her kitchen rivals the most advanced industrial work layout. Movement and steps have been eliminated; equipment is within easy reach; and she is always amid attractive, spotless surroundings.

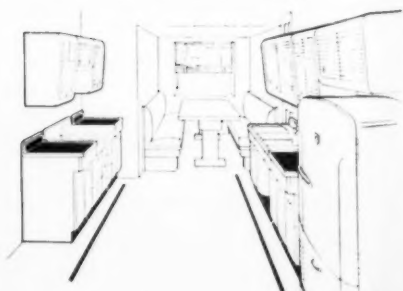
The housewife has the assistance of experts in the planning of her kitchen. No longer need she buy appliances to add to a heterogeneous collection—each purchase is an investment in a planned workshop. Her kitchen can be tailored to her purse and the physical possibilities of her home.

FUNCTIONAL DESIGN



Above: "L" type.

Below: "corridor" type.



E BEAUTIFUL

On casual observation, utilitarian values are subordinated to the aesthetic appeal. Closer observation reveals the scientific set-up. Each kitchen, generally classified as either "in-line", "L", "U", or "corridor" type, consists of three primary work areas or work centers designated by the major appliance therein — sink, refrigerator, or stove.

As a result of detailed research and analysis, the sink work area is normally located between the other two. Tools and other appliances are stored within the area of most frequent use. Wherever possible, the stove is located against an outside wall, simplifying the installation of an exhaust flue for the removal of cooking odors. Even such details as a desirable or undesirable window view are considered in the original planning.

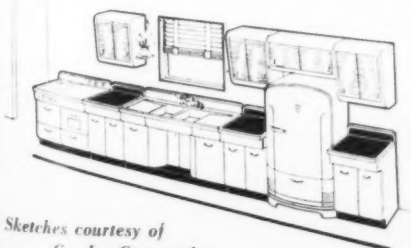
In a nation-wide survey, twenty per cent of all women stated that they planned changes for their kitchen. "Mrs. America" will be thankful for the intelligent direction of their desire for change by the producers of kitchen appliances.

NADESIGNS



Above: "U" type.

Below: "in-line" type.



Sketches courtesy of
Crosley Corporation



Courtesy of Frigidaire Division, G.M.C.



Courtesy of Crosley Corporation



→ from Page 29

and high school in Knoxville; and later studied Civil Engineering at the University of Tennessee. For the five years following, he did civil engi-

neering and construction work, starting in the enamel processing business in 1928. He is married and has one daughter fourteen.

Breeze Corporation buys Anderson Stove

John T. Mascuch, president of Breeze Corporations, Inc., of Newark, N.J., has announced the purchase by that firm of the Anderson Stove Com-

Breeze into the household appliance field. The present management founded the company twenty years ago as an automotive accessory business,



From the first completed stove at reconverted Breeze plant, the company's president, John T. Mascuch, serves turkey luncheon to former war workers who now find themselves in the domestic appliance field.

pany, Inc., and Foundry Service, Inc., both of Anderson, Indiana.

The Anderson stove, which operates on a "sealed heat" principle, will retain its name and design. It will be distributed by a new, national sales organization headed by Alfred G. Birkenmeier, former president of the Anderson Company, who remains with the stove firm as vice president. Wilbur Birkenmeier, a brother, former treasurer of the Anderson Company, will act as Western sales manager.

The Birkenmeiers, with two other brothers, Robert and Norman, have been identified with Birkenmeier and Company, Irvington, N.J., large retail outlet for gas ranges. In retail and wholesale distribution of gas ranges for more than twenty-five years, the brothers went with the Anderson Company in 1938.

This marks the first venture of

adapting its facilities to serve the aeronautical field as aviation progressed.

War products included naval bulkhead doors and armor plate for aircraft, tanks and flame-throwing cannon.

The corporation, with subsidiaries in East Orange, N.J., and Pittsburgh, Pa., is maintaining its aeronautical accessories business and other pre-war activities.

Harshaw man on Government mission

Carl J. Harbert of the Harshaw Chemical Company, Cleveland, Ohio, has been assigned to investigate German ceramics, fungicides, insecticides, electroplating, metallic soaps, and fluorides, it was announced by the Technical Industrial Intelligence Branch, Department of Commerce.

Mr. Harbert is one of eleven experts chosen from various branches of industry to investigate developments in the German chemicals field.

Four service men rejoin Ing-Rich organization

Ingram-Richardson Mfg. Company of Indiana, Inc., Frankfort, Indiana, has announced the return of four service men to the company's sales and service department and the laboratory.

Burdett Boggs, who is now a frit sales engineer, spent two years in the United States Naval Submarine Service. He was stationed at New London, Connecticut; San Diego, California; and Bainbridge, Md. Also, he operated from Subic Bay, North Luzon, P.I., and was discharged with a rating of quartermaster. Before entering the service, Mr. Boggs spent 1½ years in the company's armor plate department, 5 years in the frit sales and service department, 2 years in ceramic research and 3½ years in process control work in the plant.

Woodrow Carpenter, frit sales engineer, served four years of active duty in the U.S. Field Artillery. He was stationed at Fort Sill, Oklahoma; Fort Knox, Ky.; and Camp Gruber, Oklahoma; and was discharged with the rank of Major. Mr. Carpenter graduated from the School of Ceramic Engineering at the University of Illinois, and spent 5 years as a ceramic engineer in the Ing-Rich Laboratory before entering service.

Charles "Chuck" Thornton, who is a frit service engineer, spent two years in the U. S. Marine Corps Reserve, War Dog Training Service. He was stationed at San Diego, California; Camp Pendleton, California; and Hawthorne, Nevada. He saw active service on the Island of Maui, T.H., The Marshall Island, and Guam Island. Thornton spent sixteen years in the Ing-Rich plant in the process control division. Also, he was a foreman in the armor plate and aircraft departments for two years during the first part of the war.

Harry Aflerbach, chief chemist, spent four years in the Signal Corps, and was stationed at Fort Monmouth, N.J., and Vent Hill Farms Station,

Va. He was discharged as a Master Sergeant. Afflerbach is a graduate of Indiana University. Before entering service, he was chief chemist in the Ing-Rich Laboratory for 3½ years.

Visitor from Australia



T. C. Brennan, chief engineer, Consolidated Neon, Glebe, Sydney, Australia, was a recent visitor at the *finish* offices. Mr. Brennan spent a number of weeks in the States in the interest of his company. At the recent meeting of the National Electric Sign Association he was made an honorary member.

Stainless steel prices up

Carnegie-Illinois Steel Corporation and National Tube Company, U. S. Steel subsidiaries, announced that effective on all shipments on and after April 2, 1946, base prices and extras for stainless steel products will be increased 8.2 per cent.

Davis announces Norge-Heat

C. S. Davis, Borg-Warner president, at a recent meeting of the corporation's directors, announced that plans have been completed for the establishment of a new Borg-Warner unit to be known as the Norge-Heat division.

At the same time, he announced that Howard E. Blood had been named president of Norge-Heat. Mr. Blood is also head of the corpora-

tion's Norge and Detroit Gear divisions and a director.

Mr. Davis said the division was created to manufacture and market Norge residential heating and conditioning equipment "in anticipation of a greatly expanded demand for these products in the months and years ahead."

Initial production will include automatic, thermostatically-controlled oil-fired furnaces, utility room and under floor heating units, oil-fired water heaters and air filter units. Other products now undergoing laboratory and field tests will be added later.



V.P. and general manager

Mr. Blood, president of the newly-created division, announced the appointments of C. S. Davis, Jr. as vice president and general manager and J. W. Oswald as sales manager.

A.G.A. institutes "hall of flame"

Acting on a suggestion by Harry A. Sutton, chairman of the Industrial and Commercial Gas Section of the American Gas Association, the managing committee created the Industrial and Commercial Hall of Flame.

To be eligible for life membership in this honorary organization, certain qualifications must be met. First, having been chairman of the Section constitutes sufficient service in itself to qualify. Second, accumulation of twenty-five points through services in the Industrial and Commercial Gas Section are necessary as follows:

Chairman of a Section Committee, 5 points; Member of a Section Committee, 2 points; Presentation of a paper at A.G.A. Annual meeting or Section Conference, 5 points; Article in a trade magazine or paper prepared for presentation before an outside organization, 5 points.

Westinghouse names works manager for Buffalo motor plant

Leon R. Ludwig, manager of the Westinghouse Electric Corporation's Motor Division, announced the appointment of W. D. Ligon as works manager of the new Buffalo plant into which the Division is moving from East Pittsburg, Pa.

During the time necessary to completely shift the Division's operations from Pennsylvania, Mr. Ligon will act as resident manager of the Buffalo plant.

Pemco adds to sales staff

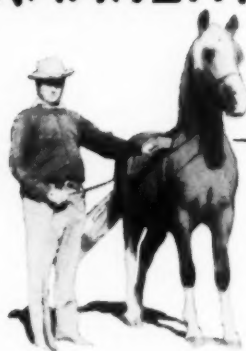


The Pemco Corporation has just announced the appointment of J. Eugene Eagle to their sales staff. Mr. Eagle graduated in 1923 from Alfred University with a B.S. in Ceramic Engineering. In 1937 he returned to Alfred to do thesis work on high temperature chrome colors, and graduated the following year with a Professional Engineer's Degree. He was associated with the tile industry for eight years while working for the Mosaic Tile Company and the Cambridge Tile Company.

For twelve and one-half years,

These photos show a few of the 300 head of Palomino horses and colts on the Fisher Palomino Farm in Eastern Pennsylvania.

A TRUE PERMANENT COLOR



P. K. Fisher, President of the Pennsylvania Palomino Exhibitors Association, trying one of the color matching plates on Zephyr, his double registered Palomino Tennessee Walking Station.

AN UNUSUAL COLOR PROBLEM QUICKLY SOLVED BY HOMMEL

The Pennsylvania Palomino Exhibitors Association needed a set of plates that Association Directors could use in determining true color when registering a horse. All other plates tried either scratched, faded, or were not true to color.

Porcelain enamel permanent color plates proved to be the answer.

Back of this quick solution was 55 years of color research and experience.

You too, can take advantage of this color "know how" and put an end to color production troubles. Hommel colors are made to perform well under your shop conditions. They are backed by Hommel's long reputation for quality. They are the result of continuous research in getting the best out of everything used in manufacturing ceramic colors—the result of successfully solving over tens of thousands of color problems.

Laboratory Controlled Production of Ceramic Supplies

HOMMEL CO.

PITTSBURGH 30, PENNA.

Pacific Coast Agents
L. H. BUTCHER CO.

- FRIT for Steel, Cast Iron or Pottery
- CERAMIC COLORS
- CHEMICALS
- BRONZE POWDERS
- METAL POWDERS
- SUPPLIES
- EQUIPMENT

Our Technical Staff and Samples are available to you without obligation. Let us help you with your problems.



World's Most Complete Ceramic Supplier

"Jake" Eagle was associated with the Vitro Manufacturing Company, of Pittsburgh, Pennsylvania, doing sales, development, and service work. For the last three years he has been associated with the War Production Board as Chief of their Non Metal Section. He served on the Board of Trustees for the American Ceramic Society from 1941 to 1944, and for several years served in the office of the Materials and Equipment Division of A.C.S. He is a charter member of the Institute of Ceramic Engineers, and a fellow of the A.C.S.

New Dextrex national accounts manager



R. W. Pflug

W. F. Newberry, industrial sales manager of Dextrex Corporation, Detroit, Michigan, manufacturers of industrial cleaning equipment and chemical cleaning compounds, has just announced the promotion of R. W. Pflug to national accounts manager.

Mr. Pflug, formerly central regional manager, started in the Company's engineering department in April, 1935. From the engineering department he was transferred to sales as service engineer on national accounts, and then was central regional manager until his recent appointment.

Seeger-Sunbeam grants pay boost

An 18 cents an hour general wage increase for the workers of the Seeger-Sunbeam Corporation, Evansville, Ind., has been announced. In-

finish MAY • 1946

creases were announced, also, for workers not covered by the collective bargaining agreement between the company and Local 813, United Electrical Radio and Machine Workers, C.I.O., and also for salaried employees. The announcement came simultaneously with ratification of a new contract between Local 813 and the company.

Pennsalt retirement plan to cover all employees

The Pennsylvania Salt Manufacturing Company has announced a company-financed retirement program which will affect all employees, including hourly workers, in its plants and offices from coast to coast.

Leonard T. Beale, president, said the plan, immediately effective, will provide for the retirement of all employees, from officers down, at the age of 65, unless otherwise specifically

ordered by the Board of Directors.

"Since the Company is paying the entire cost of plan," he said, "we reserve the right to modify or discontinue it if circumstances warrant such action. However, we consider a sound retirement plan one of the primary charges upon the Company's net earnings."

Under the retirement benefit plan, employees will be eligible for annual payments (on a monthly basis) of 1½ per cent of the highest annual pay in the three years preceding retirement, multiplied by the years of service. The maximum annual payments will be 40 per cent of the highest annual pay less an amount equal to Social Security benefits.

Mr. Beale pointed out that Pennsalt has one of the longest records of dividend declarations in the United States, the company's common stock having paid dividends every year since 1865.

A suggestion for porcelain enameler's?



The lids of thousands of steel barrels, originally made to carry dehydrated food to our troops in Europe and the Orient, are being rapidly converted into decorative trays for serving food and drinks to those same GIs in their American homes.

This novel idea was developed when Plasticote Products Corporation of Cleveland realized that these lids, already pressed into a pleasing round shape, could be easily restyled into a popular line of trays and distrib-

uted through department, gift and hardware stores as well as the premium trade.

The transition from barrel top to tray was accomplished by giving the lids a coat of plastic paint after which they are decorated with amusing cartoons and mixed drink recipes by the silk screen process and the entire job dried under infrared lamps. Drums of war to Trays of peace — does the idea offer possibilities?

More News on Page 38 →

THE IMPORTANCE OF BEING *Skeptical*





Some day soon a Pemco representative is going to call on you. He is going to tell you some things that will really open your eyes and your ears. He is going to show you why PROFITS and PEMCO PRODUCTS are inseparable. He is going to give you FACTS . . . not theory He is going to show you how plant costs can be reduced . . . how to speed up production . . . how to simplify color matching why the Spectrophotometer Pemco uses proves reflectance values. In other words he is going to render you a real service if you'll listen. And at the end of 1946 you are going to say as we hope to say to you "Thank you sincerely" . . . for the privilege of serving you . . . our friend.

We earnestly hope that you will appreciate the "Importance of Being Skeptical". . . about the statements we have made in this advertisement . . . and request PROOF of the Pemco representative. Has he called—or do you request we send him to you? . . . at your convenience.

PEMCO CORPORATION

BALTIMORE



MARYLAND

"ALWAYS BEGIN WITH A GOOD FINISH"

Chicago technical men hear panel discussion on ceramics and porcelain enamels

The Chicago Production Show and Conference, sponsored by the Chicago Technical Societies Council, was held at the Stevens Hotel on Wednesday, Thursday and Friday, March 20, 21 and 22. Fourteen thousand,



finishfoto

Mark van der Kloet

five hundred professional and technical men throughout the Chicago area attended.

Panel sessions featuring ceramic products were sponsored jointly by the Chicago District Enamellers Club and the Chicago Section A.C.S. on Friday, March 22. The panel sessions included two papers on porcelain enamel and three papers in other fields of ceramics.

The first paper in the panel session on porcelain enamel was presented by Mark van der Kloet, The Erie Enameling Company (see "The Use of Architectural Porcelain Enamel," this issue of *finish*).

The second paper was by Dwight Bennett, University of Illinois, whose subject was "War Time Development of High Temperature Ceramic Coatings and Their Potential Peace Time Uses."

The presentation on high temperature ceramic coatings was of extreme interest to the industry, but much of the material presented has not as yet been released by the Air Technical Service Command, sponsors of the research work. The paper covered various types of metal and

coating compositions included in the research activity, discussed firing technique, test methods, etc.

While final conclusions have not as yet been drawn from developments in the "high temperature" field, it would appear that especially designed high temperature ceramic coatings may answer many of the problems inherent in modern airplane power sys-



finishfoto

Dwight Bennett

tems. The author of this paper also feels that there are many possibilities for industrial applications for this type of coating.

Allen announces new sales manager

Neil H. Cargile, president of Allen Manufacturing Co., Inc., Nashville, Tenn., recently announced the appointment of M. H. (Roxy) Gwynn to the position of general sales manager.

Allen Manufacturing produces oil burning heaters, ranges, parlor furnaces and oil burning hot water heaters.

Ranney to start profit-sharing plan

The Ranney Refrigerator Co., Greenville, Mich., has announced a profit-sharing plan for employees who refrain from participating in strikes and walkouts.

Some 300 employees would receive 25 per cent of the firm's profits an-

nually before taxes were deducted. This represents about a 50-50 division of profits between stockholders and earnings, officials said.

Production is scheduled to be resumed soon after several months of partial operations because of reconversion and other factors.

Paul Ahlbrandt joins Bendix organization

J. Paul Ahlbrandt has been appointed master mechanic for Bendix Home Appliances, Inc., South Bend, Ind., by H. L. Spencer, vice-president in charge of manufacturing. He succeeds A. R. Grierson who has joined the Clyde Porcelain Steel Products corporation, Clyde, O., as assistant to the president.

Since April, 1943, Mr. Ahlbrandt had been chief engineer, and in the last year acting plant manager, at the Midwest Mfg. Co., Galesburg, Illinois.

His technical education was obtained at Carnegie Tech in engineering and the University of Cincinnati in business finance. Industrial affiliations include several years in the operating departments of the American Rolling Mill company; 8½ years with the Ingersoll Steel & Disc division of Borg Warner corporation as research and development engineer, assistant chief engineer, and manager of ordnance production; and 1½ years with the war production board as head production specialist.

Products of Tomorrow exposition postponed

Due to the uncertainty of products and delivery schedules of vast numbers of the nation's leading manufacturers, the Products of Tomorrow Exposition scheduled to open at the Chicago Coliseum April 27th has been indefinitely postponed, according to Marcus W. Hinson, the general manager of the Exposition.

The national production outlook seems so clouded, Hinson said, that the majority of the manufacturers who originally planned to display their postwar products now consider it inadvisable to participate in public exhibits until they are more certain of their future capacity for delivery.

It was further disclosed by Hinson that numerous foreign interests representing India, Britain, Russia, Holland, China and South American countries have indicated their intention to take part. The Exposition may be given by the fall of this year or held over to early in 1947.

Gallup leaves Porcelain Metal Products



It is reported that Milton Gallup has resigned his position as president of Porcelain Metal Products Company of Pittsburgh, Carnegie, Pa., effective April 15. Mr. Gallup has joined the organization of G. O. Carlson, Inc., Thorndale, Pa., producers of stainless steel plates, sheets and bars.

"Milt" has been active in the porcelain enameling industry for a number of years, and is a member of the Board of Trustees of the Porcelain Enamel Institute.

Frigidaire appointment

W. F. Switzer, manager, Marketing Research Department, Frigidaire Division, General Motors Corporation, has announced the appointment of R. G. McCloskey as supervisor, Customer Research, and R. H. Smith as supervisor, Distribution Research.

In his new capacity Mr. McCloskey will be responsible for measuring product desires of the public. The Distribution Research section will be concerned with keeping Frigidaire apprised of competitive wholesaling and retailing of appliances and new

finish MAY • 1946

trends and developments in the field of product distribution.

Returns to Norge



W. S. (Bing) Law has been appointed manager of refrigeration sales for the Norge Division of Borg-Warner Corporation, it was announced recently by M. G. O'Harra, vice president and general sales manager.

Upon his discharge from the service, where he served in the Army Air Forces, Law carried the rank of lieutenant colonel, and has just returned from Rio de Janeiro, Brazil, where he was a member of the joint Brazil-United States military commission.

It is reported that he has devoted virtually all of his business activities to the promotion and sale of Norge household appliances, having spent 14 years in the appliance distribution business.

Eastern enamellers meeting

The Eastern District Enamellers Club has announced its next and final meeting of the season to be held in Baltimore, June 1, 1946.

Servel to buy Govt. plant in Evansville

The plant operated by Servel, Inc., at Evansville, Ind., for the manufacture of wings for airplanes will be sold Servel for \$810,000 cash, subject to the priority rights of Federal Government agencies, the War Assets Administration has announced.

The sale includes about six and one-half acres of land, a one-story

industrial type building of concrete, wood, and brick construction with a 248,703 square foot floor area; and building installations including four one-ton cranes, ventilation and heating systems, and other equipment. Actual cost of the facilities being purchased amount to \$1,489,321 and the present estimated fair value is \$900,000.

Sign man from Akron



Paul Fritsch, of The Goodyear Tire and Rubber Company, Akron, Ohio, was a recent *finish* visitor. Mr. Fritsch is considered a leading authority on the effective use of signs, and has discussed sign problems before the porcelain enameling industry (See "Principles of Sign Identification," page 24, July 1944 *finish*). The company he represents is a large user of our industry's product — both for signs and as an architectural medium.

Chicago enamellers May meeting

The Chicago District Enamellers Club will hold its next regular meeting on Saturday, May 18 at the La Salle Hotel in Chicago. (time 12:00 noon)

The subject to be covered is Infra-Red Drying. Two competent speakers are scheduled to speak on this subject, covering both gas and electric types of infra-red dryers.

Cleveland industrial exposition

The first Mid-America industrial exposition is scheduled for Cleveland, Ohio, from May 23 through June 2. Public Hall and all exhibi-



THE COLOR PROBLEM GROWS

... but Du Pont can help you solve it!

Today, with the return of peacetime competition, you've a new problem... putting your products "up front" ahead of competition! And that's the problem Du Pont Color Oxides can help you solve. These oxides will add eye-appeal and buy-appeal to any products you make. They're standardized for hue, strength, purity, and stability under repeated firing.

In addition, Du Pont Technical Service Men can help point the way to more sales! They'll work with you in color-selection, formulation and adoption of new procedures that can help you speed production and save cost. For samples and additional information, just write: E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Department, Wilmington 98, Delaware.

Du Pont Ceramic Colors

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY



bition halls will be turned into a show window where a display of postwar commercial and home products will be spotlighted during the 11-day showing.

The Mid-America Exposition is expected by its sponsors — leading business, industrial, labor and civic groups of the region — to become one of the greatest annual industrial expositions in the country. The purpose of the exposition is to focus national and international attention on the region's industries, craft skills, engineering resources, diverse production, research facilities, advertising, selling and distribution facilities.

Detailed information on space and tickets may be secured from Exposition Headquarters, 226 Public Hall, Cleveland 14, Ohio.

Federal's enamel superintendent



The accompanying finishfoto, showing August Lindberg, Federal Electric Company's new enamel plant superintendent (see December, 1945, *finish*), as he was "snapped" during the recent Chicago Production Show and Conference.

Grand Home Appliance Co. elects new vice president

The election of A. B. Cameron as vice president and sales manager has been announced by James Mitchell, president of Grand Home Appliance Company of Cleveland.

Mr. Cameron joined Grand in June, 1944, after 15 years as merchandising head of one of the country's largest marketers of gas ranges. In

finish MAY • 1946

October, 1945, he was appointed sales manager. The recent promotion carries with it responsibility for supervising a major expansion in the company's production facilities. The new facilities, it is reported, will enable Grand to produce more than twice the unit volume built during any prewar year.

Enamel control at Norge

Harold A. Becker, of Montague, Michigan, is the new porcelain enamel control man at the Norge Division, Borg-Warner Corporation, Muskegon Heights, Michigan.

Bruce Wagner forms new company

It is learned that B. F. (Bruce) Wagner, who has been with Titanium Alloy Manufacturing Company since November, 1927, has formed B. F. Wagner & Company, with offices at 30 South Chester Avenue, Pasadena, California. The new company will handle ceramic and industrial chemicals.

Bruce is a graduate in chemical engineering from Iowa State College. He was with Coonley Manufacturing Company for three years, and was on the Ferro Enamel Corporation service staff prior to joining Tam.

Samuel Fossaceca, who graduated from Alfred in 1940, has joined the organization as ceramic engineer.

Pittsburgh section A.C.S.

The Pittsburgh Section of the American Ceramic Society met on Tuesday evening, April 9, at Mellon Institute for its regular monthly meeting. A dinner at Webster Hall Hotel preceded the formal meeting.

The speakers of the evening, Dr. H. J. Rose, executive vice president, Bituminous Research, Inc., and Dr. Stuart M. Phelps, Mellon Institute, were introduced by Dr. Ralson Russell of Research Laboratories, Westinghouse Electric Corporation.

The next regular meeting of the A.C.S. Pittsburgh Section will be held Friday evening, May 24. This will be "Ladies Night," and it is planned to be strictly on the social side with no serious business to be considered.

Dinner will be held at the University Club at 6:30 P.M. with dancing following immediately after.

Members of other local sections are cordially invited to attend.

News from the U. of I.



A. W. Allen

A. W. Allen has been appointed as an instructor in Ceramic Engineering. Formerly he was working on the Army Air Forces project as a Special Research Associate. Mr. Allen received his B. S. degree in Ceramic Engineering from the Missouri School of Mines and Metallurgy, and his M. S. from Virginia Polytechnic Institute. After holding a Research Fellowship at V.P.I. he was with the Harbison Walker Refractories Company as a research engineer. In three years duty with the AAF, he served as aviation cadet, navigator, and navigation instructor and meteorologist.

Other staff appointments include ceramic engineer A. L. Friedberg, '41, as half-time assistant and the following special research assistants on the AAF Research project: T. F. Newkirk, '41; R. F. Kimpel, '41; W. A. Graff, '46; and Frank Klane, '41.

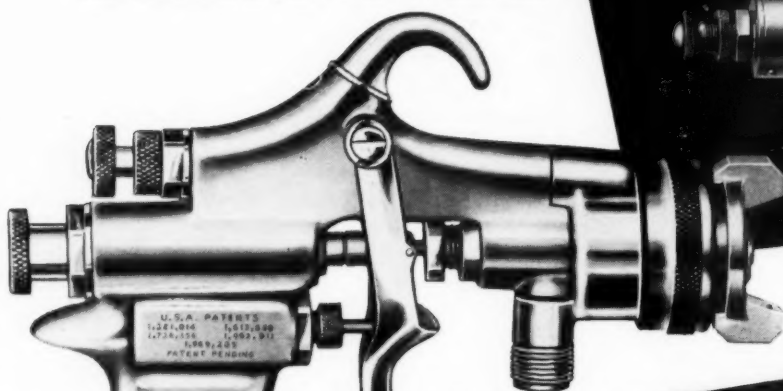
Batchelder to Caloric

M. W. Batchelder has joined the sales division of Caloric Gas Stove Works. He is located in the Chicago office, American Furniture Mart. Before the war Batchelder covered the Chicago trade for Magic Chef and

to Page 56 →

There's a Complete Line

The DeVilbiss Type WV Spray Gun is automatically operated for high production use and produces finishes comparable in quality to hand operated guns.



The DeVilbiss Type MBC Ceramic Spray Gun is a high-speed production gun for efficient handling of all ceramic materials. The removable spray head is only one of many features to improve finishing quality and do it economically.



The DeVilbiss Type CM Spray Gun is for women operators. It is small, lightweight, with a comfortable grip and short, easy trigger pull.



The DeVilbiss Type AG Spray Gun is designed particularly for producing appealing effects in stenciling, tinting, shading, and decorating.

OF DE VILBISS SPRAY GUNS

SPECIALLY DESIGNED FOR THE PORCELAIN ENAMEL AND CERAMIC INDUSTRIES



Whatever your finishing requirements may be, there's a DeVilbiss Spray Gun that is specifically engineered and built to solve your most difficult problems.

Years of *direct factory contact* with spraying problems common to the porcelain enameling and ceramic industries have given DeVilbiss Engineers a wide experience in designing and building the correct gun for every conceivable spray application.

DeVilbiss Spray Guns are engineered for extra long life and are built to withstand the abusive use of ceramic finishing materials. Vital parts are constructed of special

metal to resist rust, corrosion and abrasive wear. And the complete DeVilbiss line includes guns for general ceramic use—lightweight guns for women—guns for tinting, shading and decorating—even guns for automatic spray finishing.

Look to the leading spray equipment manufacturer for the most complete line of spray guns available for finer workmanship, lower cost and better service. A DeVilbiss Engineer will welcome the opportunity of discussing your problems with you.

THE DEVILBISS COMPANY • TOLEDO 1, OHIO

Canadian Plant: WINDSOR, ONTARIO

DE VILBISS

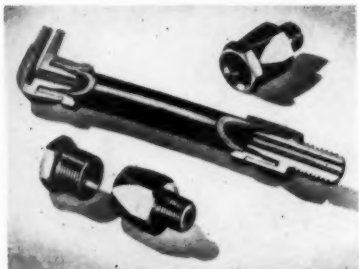
means Quality in all four..



SPRAY EQUIPMENT
EXHAUST SYSTEMS
AIR COMPRESSORS
HOSE & CONNECTIONS

New supplies and equipment

Reusable hose couplings



A complete line of attachable-detachable reusable metal couplings have been introduced to make it possible to hand-assemble flexible hose lines. Combined with any flexible hose, these reusable couplings are said to be easily attached and detached, and are claimed to be effectively resistant to vibration.

Contact Resistoflex Corporation, Belleville, N. J.

Measuring cup for screen test

The O. Hommel Company of Pittsburgh have introduced an aluminum beaker to accurately and quickly measure 100 cc. This beaker is said to save considerable time in making a fineness test of enamel slips and to eliminate inaccuracies encountered when measuring with a glass beaker.

Electric lift truck



A compact electric lift truck, with which it is said a man or woman operator can pick up and "walk off" with a load up to 3 tons by using finger-tip pressure on dual cam controls beneath the hand bar-grip, was recently introduced.

The drive motor, located at the base of the handle, is a high-torque,

ball bearing type. Power for both the elevating and drive motors is obtained from a lead or alkaline battery housed in a compartment which is an integral part of the truck chassis. Available in two types — platform or pallet.

Contact The Yale & Towne Manufacturing Co., 4530 Tacony Street, Philadelphia 24, Pa.

Two-color spray gun



Two-coat spatter finishes and two-color spray finishes are now said to be possible in one spraying operation with a newly-developed spray gun which sprays two colors simultaneously through one nozzle.

Corrosion resistant coating for tanks

A section of the Amertorp plating room where corrosion resistant coatings for plating tanks were tested.



The severe corrosion which exists in most plating rooms and on plating room equipment is well known by the finishing industry. The fumes from pickling baths and

It is said that the new gun differs but slightly from the ordinary spray gun in appearance or operation. It has normal spray fan control valve and fluid control valve, trigger assembly, head, fluid tip and needle. However, it has an additional fluid inlet near the head of the gun to accommodate the second color.

Contact The Sherwin-Williams Company, Cleveland, Ohio.

Oxygen recorder

A new automatic continuous analyzer for indicating and recording the oxygen content of a gaseous mixture has been developed by Bailey Meter Company, Cleveland, Ohio. This instrument is said to have been successfully applied to boiler furnaces, kilns, many types of metallurgical furnaces, glass tanks, chemical and petroleum processes.

The instrument provides a graphic analysis almost instantly, and is said to be responsive to changes of .05% oxygen. Sustained accuracy is said to be within .25%.

The manufacturers say that Oxygen Recorders applied to all types of furnaces operating with oxidizing atmospheres permit closer regulation of fuel-air ratios, resulting in increased economy and decreased furnace maintenance.

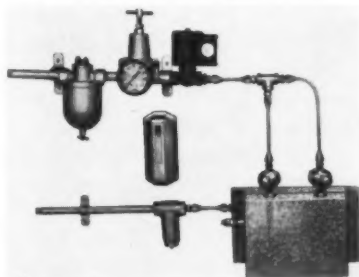
chrome tanks, together with the drip and spillage from sodium cyanide, chromic and sulfuric acids, copper sulfate, sodium hydroxide, and other plating chemicals, create a very com-

plex corrosion problem, and one which requires a versatile material if it is to stand up under the many and varied corrosive plating solutions.

D. T. Kelly, foreman of the Paint Department of the Amertorp Corporation at the U. S. Naval Ordnance Plant, Forest Park, Illinois, made a thorough study of corrosion resistant coatings and their application to plating rooms, etc. He is said to have found a coating which appears to have all of the required properties such as easy application by plant employees; relatively low cost; abrasion resistance; good adhesion over steel; heat resistance; and to have good resistance to such acids as hydrochloric, sulfuric, phosphoric and chromic; excellent resistance to caustic solutions and petroleum products.

Contact Amercoat Division, American Pipe and Construction Co., Los Angeles, California.

Industrial humidifying unit



A new industrial humidifying unit can be delivered in a single, compact unit ready for installation. It produces a finely atomized humidifying spray, and is made in two or four nozzle units with humidistat control. Siphon type humidifying nozzles are used which utilize compressed air, mixed externally.

Contact Spraying Systems Co., 4021-23 W. Lake Street, Chicago 24, Ill.

Induction heater for production soldering

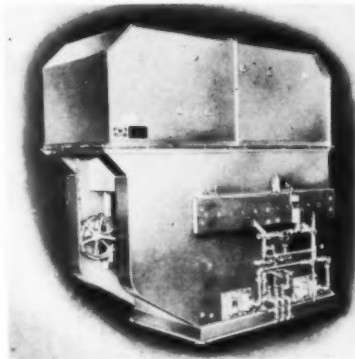
A portable bench type induction heater has been developed for the soldering of small parts and for soldering of metal to metallized glass and ceramics. It is suggested for the production of instruments, electrical

finish MAY • 1946

fixture components, household fixtures, etc.

Contact Marion Electrical Instrument Co., Manchester, New Hampshire.

Immersion vapor degreaser



Small basketed parts are cleaned in a new two-dip immersion vapor degreaser recently announced. Designated as 500-C-1, the conveyORIZED machine permits a choice of any one of several cleaning cycles.

Work to be cleaned is loaded at one end of the degreaser, carried through the cleaning cycle, returned through the upper hood to the same end of the machine, and unloaded. The conveyor system is complete with necessary sprockets, shafts, take-up device, speed reducer and vari-speed drive.

Contact Detrex Corporation, 1301 Hillview Avenue, Detroit 27, Michigan.

Bath tub shipping crates

A new method of shipping bath tubs, which reduces shipping weight and damage losses to a minimum, has been announced by the Trenton Potteries Co., Trenton, N. J., subsidiary of Crane Company.

Special wirebound crates, scientifically engineered to carry the Crane tubs, in the past few months, have reduced shipping weight by more than one ton per car, and also have cut shipping damage losses very materially, according to company officials.

The tub, which weighs about 275 lbs., is entirely floated in a wire-bound crate which weighs 50 pounds as compared to the former type of

container used which had a tare weight of 90 pounds for the smaller size tub. Fewer excelsior pads are used in the new method of packing, and these merely for protection to the finish.

Industrial literature

Engineering handbook on fluid measurement

Complete and concise treatment of fluid measurement, including related factors, equipment, equations and computations in terms of steam, water, oil and gas flow, is offered in a new volume, "The Flow Meter Engineering Handbook," compiled and edited by Louis Gess and R. D. Irwin. The new volume has information for students as well as engineers.

Sold by The Brown Instrument Company, Wayne & Roberts Avenues, Philadelphia 44, Pa.

Porcelain Enameling Reference Manual

Pemco Corporation, Baltimore, Md., has just announced the completion and the release of a new Reference Manual which has been in the development stages for the past four years. The indicated purpose of the manual includes the correlation for ready references of essential knowledge of porcelain enameling plant control and the presentation of data that will serve as an aid in the correction of enameling shop problems.

The manual contains nine main index sections representing over 100 pages of enameling specifications; 14 individual Porcelain Enamel Institute booklets; specially written booklets on various enameling tests; and seven complete sets of plant and laboratory control and layout charts. It is 3 x 12 x 12 in size, has a black leather binding and special three ring loose leaf filler unit to provide for inserting additional material. For the first time all phases of porcelain enameling and answers to porcelain enameling questions are available — all in this one manual, say the publishers. The first copies are being sent free

to Page 46 (Column 3) →

The Washington round-up

(Continued from Page 26)

modities," was taken as a means of carrying out the general OPA decontrol policy, but also, significantly, of meeting a situation brought about by the wage-price policy. In many of these items, the OPA admits, it is simpler to lift price ceilings than it is to administer the new and higher ceilings that would be necessary under the mandate to lift prices where labor, material and other costs are

shown to be higher.

In the case of the consumer items a positive step is taken to effect the decontrol policy. All articles still under control under MPR 188 will be specifically listed. All others, including those now eliminated, will be freed of price control by their absence from the list. This has not been true in the past, as the list was never entirely inclusive of the myriad of

articles which the OPA covered. While items such as ice cream freezers, Domestic jeweled watches, candles, glass novelties, scissors, knives, lawnmowers, barometers, toilet sets, key chains, compacts, minor business machines, soap dispensers, veterinarian equipment and hundreds of smaller items are to be exempt, the OPA emphasizes that a list of other consumer durable goods still remains under price controls. Some of the items still under their specific regulation are cooking stoves, washing and ironing machines, vacuum cleaners and refrigerators.

Announcing a New Name

FERRO CHEMICAL CORPORATION

and introducing
a new trade-mark



W. B. Lawson, president of W. B. Lawson, Inc. and Ferro Drier & Chemical Co., both subsidiaries of Ferro Enamel Corporation, announces the merging of these two organizations under the new name—FERRO CHEMICAL CORPORATION. FERRO CHEMICAL CORPORATION—with your same old friends, plus the same fine products—provides a *single source of supply* for Industrial Chemicals, Driers, Metallic Soaps and Chemical Specialties for all industry, as well as continuation of the personalized service you have come to expect from the original organizations.

Warehouse stocks in Cleveland, Detroit, St. Louis and (in the case of driers) 15 other cities are retained in this new setup. The same sales agents, too, are available for your convenience in ordering.



W. B. Lawson
President

FERRO CHEMICAL CORPORATION
(Subsidiary of Ferro Enamel Corporation)

Union Commerce Building

Cleveland 14, Ohio

Industrial literature

→ from Page 45

of charge to a selected list of porcelain enamellers, and additional copies may be purchased for the cost price of \$5.00.

"Not by Bread Alone"

How an American flier, stranded in a remote Chinese village, comes to realize that the American way of doing business is something more than just the thought of profits, is told in a 16-page booklet published by Mullins Manufacturing Corporation, Salem, Ohio.

Entitled, "Not by Bread Alone," the booklet points out how the individual efforts of every person contributes to the prosperity of the nation, and how men and dollars at work can keep America prosperous.

Copies of the booklet may be obtained from the company upon request.

Cleaning and drawing compounds

A twenty-four page catalog of information regarding thirty-nine different cleaning and drawing compounds has just been released. Five general classifications of cleaners are covered: (1) Electrolytic, (2) Immersion, (3) Solvent, (4) Spray and (5) Water Wash compound for spray booths. The five types of drawing compounds that are described are particularly designed for: (1) Brass and brass alloys, (2) Cold rolled

to Page 60 (Column 3) →

MAY • 1946 finish



*Triple
action...
for
better
production*



THIS Verson Triple-Action Eccentric press can be used for producing a wide variety of stampings and deep drawn shapes. Its smooth, powerful action, delivered through a Verson Full Eccentric instead of a conventional crankshaft, plus its fully automatic cycle, enables this machine to meet the most stringent requirements of the industry.

The Verson Allsteel Welded frame of this press is rated at 900 tons and the capacity of the punch slide is 650 tons. It is equipped with Verson Hydro-Pneumatic Cushions in the bed with a Verson Hydraulic Locking Device for triple operation work.

There is a Verson Allsteel Press for every requirement. Ask to have a Verson engineer help you select the right one.

VERSION ALLSTEEL PRESS COMPANY

9309 South Kenwood Avenue • Chicago 19, Illinois

HYDRAULIC PRESSES • POWER PRESSES • FORGING PRESSES
CLUTCHES • • DIE CUSHIONS • • PRESS BRAKES

The sheet steel situation

(Continued from Page 16)

no expansion in light flat-rolled capacity in the war years, and the total of such capacity is and will for several years to come be slightly less than pre-war.

At the same time the flat-rolled industry, with somewhat less capacity, with restrictions on output, with crews still only partially trained, is called upon to meet a demand un-

precedented in our history. We have the additional limitation of steel ingot capacity. The demand for every type of steel product, bars, pipe, wire, is just as pressing as the demand for sheets. Rarely in normal times do all branches of the steel business operate at capacity and our blast furnace, open-hearth and other melting capacity is more than adequate. Today

the real limitation on our operations is the amount of steel we can melt. That is why, even if we were to build an additional continuous mill, we would have to add open hearth furnaces and perhaps a blast furnace to provide the steel for it.

It is unnecessary for me to quote any figures on the huge backlog of demand for consumers' durable goods; they have been widely published. And almost every one, automobiles, stoves, refrigerators, washing machines, appliances and consumer products of every description, require flat-rolled steel as their principal component.

Nearly every manufacturing customer we have has either expanded his plant to produce two or three times his pre-war output, or is in the process of doing so. Some of these expanded production lines requiring flat-rolled steel primarily have no hope of full operation for some time to come.

We do not think manufacturers have been unrealistic in their expansion plans. Our investigations indicate the huge demand for almost everything is authentic and the money is available to satisfy it. It does appear, however, that for the first time in American history our productive capacity will fail to measure up to demand for some time to come.


Steel rationing

As most readers will know, we are rationing steel among our regular customers. This is a touchy subject and I want to explain how we have gone about it. Since we have no more flat-rolled capacity than we had pre-war, the logical procedure of selecting certain normal pre-war years and arriving at an average monthly quota was established. In the light of war-time expansion and post-war demand, this quota seems very small to many of our good friends, but the sum of all the quotas is our total capacity to produce. We have no surplus we can dip into to satisfy individual needs. We are straining every nerve to produce and ship the last possible pound.

There is no way to get quick relief from this condition and steel users

to Page 54 →

You gain **QUICK** dealer acceptance
with
ROBERTSHAW
oven heat control



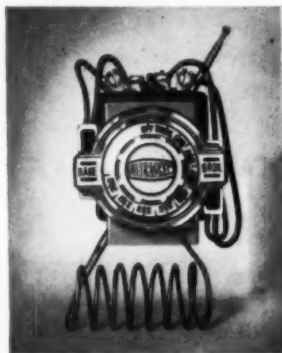
You get added sales value because appliance dealers from coast to coast *know* and prefer Robertshaw oven heat controls. You get better oven performance because of the sturdy, powerful snap-action mechanism. Non-fatiguing, sensitive to exceedingly small temperature changes and highly accurate, it will maintain close differentials indefinitely.

Robertshaw models include thermostats for dressing sterilizers, autoclaves, incubators, electric and oil ranges, ovens, water heaters, laundry machines, deep-fat fryers, coffee urns, food carriers, chicken brooders and many other uses. Write for full information.



A Manual for Range Salesmen

Here's a sales manual that will help you train your own and dealer salesmen to do the kind of a selling job that will put modern ranges at the head of the Peacetime shopping list. Write for *free* copies.



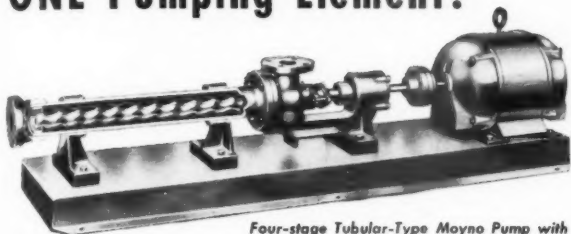
MODEL C1

With automatic selector switch. Designed to control 2 elements either individually or simultaneously.

Snap-Action Thermostatic Controls
ROBERTSHAW THERMOSTAT
COMPANY
Youngwood, Penna.



This 4-Stage Pump has just ONE Pumping Element!



Four-stage Tubular-Type Moyno Pump with section of housing cut away to show rotor.

Multi-stage pumping for high pressures or high heads usually requires *two or more* individual operations by *two or more* individual units—the first delivering under pressure to the second, the second adding its pressure when delivering to the third, and so on. Usually, it's a costly and cumbersome arrangement, but *not* with a Moyno Pump! Multi-stage operation in the R & M Moyno adds *not one moving part*.

The *longer* the rotor and stator, the *greater* the number of seal lines, and each seal contributes an *equal share* to total discharge pressure. Power is supplied by a *single* motor. Everything is mounted upon a *single* welded steel base, whether the pump has one stage or *six*.

NO PULSATION—LOW TURBULENCE

The amazing Moyno principle is as simple as it is difficult to explain clearly in a few words. A single-thread helical rotor revolving within a double-thread stator imparts positive pumping action comparable to that of a piston moving through a cylinder of infinite length.



This is a single-stage pumping element. It has three continuous seal lines. The four-stage unit has twelve individual seals.

DURABLE—VERSATILE—DEPENDABLE

The Moyno pumps virtually *everything*, from free-flowing liquids to non-pourable pastes. It is self-priming, *stands up* on abrasives, *resists* chemical reaction, passes particles and solids in suspension, confines all wear to *conveniently replaceable* parts. Thousands in service. Get the *facts*. Take the time right now to ask for our new book, "A Turn for the Better in Positive Pumping Without Pulsation."



ROBBINS & MYERS • INC.

MOYNO PUMP DIVISION • SPRINGFIELD, OHIO
In Canada: Robbins & Myers Co. of Canada, Ltd., Brantford, Ont.

MOTORS • HOISTS • CRANES • MACHINE DRIVES • FANS • MOYNO PUMPS • FOUNDED 1878

GOING STRONG . . .

Chicago's Newest Jobbing Plant

OUR new jobbing plant has been in operation less than two months . . . but . . . we are operating 24 hours a day, 7 days a week; in other words, "going strong."

The work we are turning out in volume is quality work—the kind of porcelain enameling you want for your product.

If you have a metal product that should have the protection of ever-lasting porcelain enamel, let us quote on the job—or better yet, submit a sample to us for enameling.

For quality porcelain enameling, prompt service and the right price—

Phone or write to—

LAWNDALE ENAMELING COMPANY • CHICAGO

1137-1139 West 14th Street (Postal Zone 8)

• Telephone Cheseapeake 5495

HI-HEAT and CORROSION RESISTANT COATINGS

KAYKOTE Ceramic coatings and Metallic Hi-Heat coatings will solve your coating problems. They are ornamental as well as corrosion-resistant.

Kaykote Ceramic coatings for metals, asbestos and refractories, in black, white and colors.

Metallic coatings in aluminum and bronzes. Hi-Heat Aluminum for temperatures up to 1000° F.

Anti-fouling and anti-corrosive copper bottom coatings.

We offer an engineering service for special problems and furnish materials to meet definite requirements.

*"The difficult we do right away - -
The impossible takes a little longer."*

Industrial Coatings Co. LOS ANGELES 26, CAL.

4031 Goodwin Ave.

Ch. 5-2693

A New Jobbing Plant At Your Service

SEND your porcelain enamel jobbing work to Rockford for quality work and prompt service. Our new and modern plant is completely equipped to do the kind of enameling job you want.

At Mid-West Porcelain you will get the advantage of many years of porcelain enameling experience in the finishing of your products. Our plant superintendent has had nineteen years' experience, and our foreman has had twenty-seven years' experience in porcelain enameling.

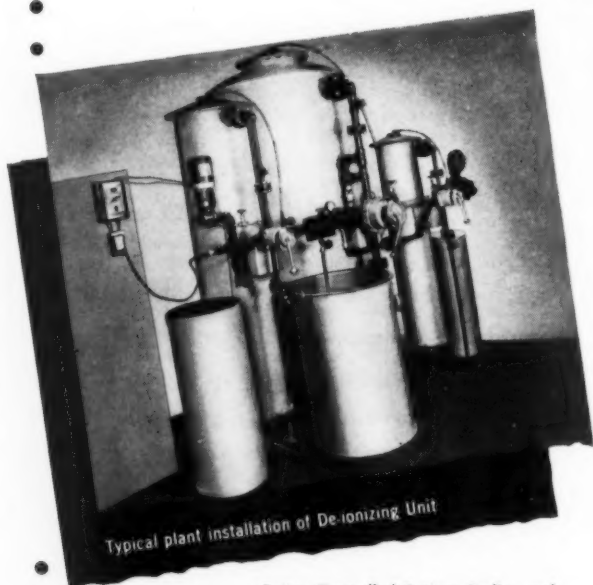
Contact us for a quotation on your next job.

Mid-west Porcelain Enameling Company

1602 South Main Street • Rockford, Ill.

Lower your rejects by making your enamels with

DE-IONIZED WATER



Typical plant installation of De-ionizing Unit

Better Controlled Pottery Bodies and
Glazes: ILLCO-WAY De-ionized Water can help the
potter control his body and glaze compositions.

Reduction in rejects and elimination of copper heading have been obtained in leading ceramic plants when De-ionized Water was used in making the enamel. The varying acidic and basic reactions of natural waters affects the proper flocculation characteristics of frit and clay. Adjusting the enamel to make it function properly is costly as it requires materials and takes time.

You can assure yourself of a reliable water for enamel, by installing an ILLCO-WAY De-ionizing Unit. It will produce all the water your plant requires for capacity operation at a cost from 1% to 10% of that of distilled water. No fuel required, no cooling water. Maintenance is simple — no periodic dismantling for cleaning. Write for literature today!

Illinois Water Treatment Co., 866-S Cedar St., Rockford, Illinois
7310-R5 Empire State Bldg., New York City

Water Treatment Engineering



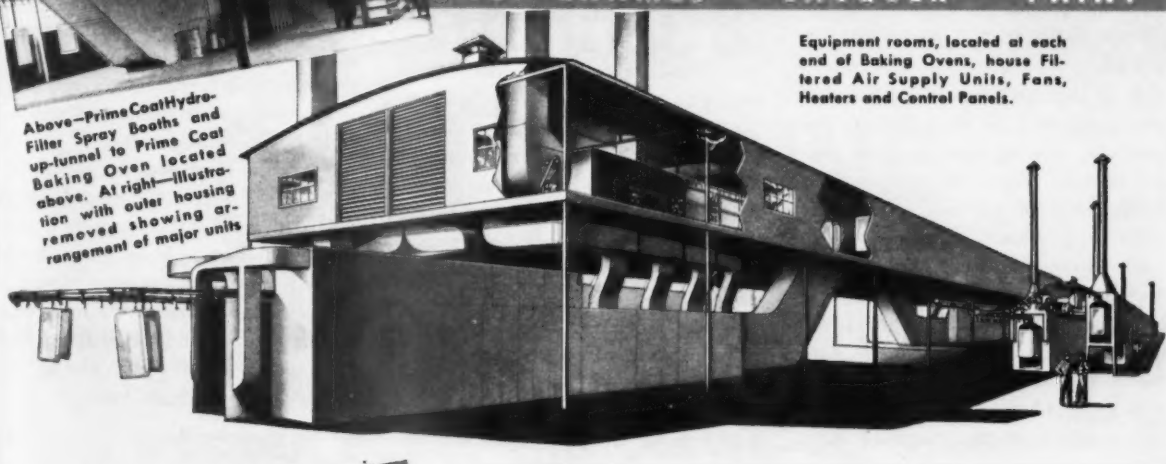
COMPLETE *Finishing* SYSTEMS

for ENAMEL • LACQUER • PAINT

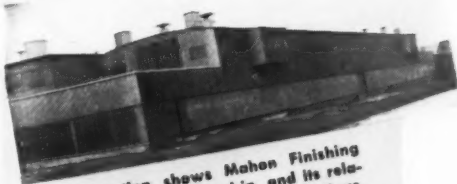


Above—Prime Coat Hydro-Filter Spray Booths and up-tunnel to Prime Coat Baking Oven located above. At right—illustration with outer housing arrangement showing arrangement of major units

Equipment rooms, located at each end of Baking Ovens, house Filtered Air Supply Units, Fans, Heaters and Control Panels.



Final Coat Hydro-Filter Spray Booths. Filtered air is supplied to all Spray Booths and maintained at a slight pressure inside the booth enclosure.



This illustration shows Mahon Finishing System completely housed-in, and its relation to adjacent manufacturing buildings.

... Here, is a Typical Example of Mahon Planning and Engineering

The Complete Finishing System Planned, Engineered, Fabricated and Installed by Mahon for the American Central Manufacturing Corp., Connersville, Indiana—an installation especially designed for finishing Refrigerator Cabinets and other Household Appliances—illustrates a few of the advantages of turning your complete finishing problem over to Mahon engineers. In this instance, the greater part of the complete system was erected outside of existing buildings . . . the entire contract—including necessary additional housing, which became an integral part of the Finishing System—was handled by the Mahon organization. This is typical of what Mahon engineers have done for hundreds of manufacturers all over the world . . . these engineers—pioneers in this highly specialized field, which covers every industry where Finishing constitutes a major production operation—are endowed with a wealth of technical knowledge, experience and practical know-how, not available to you elsewhere. If you have a finishing problem in your plant today, or are contemplating new equipment of this type, call in a Mahon engineer—consultation will not place you under obligation.

Address Correspondence to INDUSTRIAL EQUIPMENT DIVISION

THE R. C. MAHON COMPANY

HOME OFFICE and PLANT, Detroit 11, Mich. • WESTERN SALES DIVISION, Chicago 4, Ill.

Engineers and Manufacturers of Complete Finishing Systems including: Metal Cleaning Machines, Rust-Proofing Machines, Dry-off Ovens, Hydro-Filter Spray Booths, Filtered Air Supply Units, and Drying and Baking Ovens. Also Paint Reclaiming Units, Hydro-Foam Dust Collecting Systems, and many other Units of Special Production Equipment.

MAHON

The use of architectural porcelain enamel

(Continued from Page 18)

aware of the erection requirements.

Architectural porcelain enamel for exterior purposes is not obtainable in standardized commercial units which can be selected from a catalogue in accordance with fixed shapes and sizes, for the units are detailed and fabricated to suit each individual building design. This allows the architect freedom and originality in design.

It is also advisable that the architect understand the limitations of the medium. During the years of war production, tolerances measured in thousandths of an inch became familiar requirements to many people. Such extremes are not applicable to architectural porcelain enamel, and tolerances of 1/16" are common practice. Closer restrictions are not warranted for practical application.

A general knowledge of the fabrication and enameling processes must be conveyed to the architect. When he knows that architectural porcelain enamel units are fabricated of a special enameling steel, to which an inorganic mineral substance is fused at temperatures of 1500° to 1600° F. on all sides of the sheet steel unit, and realizes that the glass-like substance is actually fused onto the steel, he has no more fear of possible rusting of the material. He will appreciate the greater freedom in the development of his design when he knows that additional coats of enamel are applied under similar temperatures to obtain the desired decorative colors or textures of the unit.

Knowledge of the fabricator's problems will eliminate designs of units which are extremely difficult to fabricate or may require special dies or costly fabrication operations. Units of practically any shape or form can be produced in the fabricating shop, but excessive fabrication costs are often not warranted when slight adjustment in the design of the unit may lead to more economical results.

Present attachment methods are satisfactory for today's installations. Without doubt, new methods of attachment will have to be developed

to meet the requirements of future applications of the product.

"... essential—experienced and capable erectors"

To obtain satisfactory results in the erection of the material it is essential that experienced and capable erectors are employed. The ultimate result of the installation depends to a large extent on the proper erection and, therefore, several manufacturers prefer to take the full responsibility for the complete installation and handle the erection with their erectors of proved ability and experience.

Porcelain enamel is not a commodity which is sold like butter or wallpaper on a standard unit basis. The simplicity or complexity of the design, the amount of engineering involved, details of erection, etc., have to be considered to determine the cost of an installation, and only after examination of architects' plans can intelligent quotations be prepared.

"... the interest and confidence of the architect"

The Porcelain Enamel Institute is engaged in a program of acquainting architects, engineers and contractors

with the merits and applications of present day porcelain enamel, and it is reasonable to expect that this will result in more extensive use of this material—not only in the type of structures where porcelain enamel has been used in the past, but probably in many branches of architecture where this material was not considered before. For the construction of schools, hospitals, public buildings, industrial structures and many other types of buildings, where the combination of beauty, cleanliness, permanence, artistic treatment and economy is required, porcelain enamel will receive serious consideration.

When the enamellers succeed in obtaining the interest and confidence of the architect in their product, this combination of architect and enameller will lead to many new developments in the design of the units and attachment methods, and will open up many new possibilities in the use of architectural porcelain enamel.

This article was adapted for finish from a talk before a panel session of the Chicago Technical Societies Council sponsored by the Chicago District Enamellers Club with the Chicago Section of the A.C.S.



.....

GOOD MERCHANDISING **includes** **GOOD PACKING**

.....

WOODEN BOXES AND CRATES—ALL KINDS

**Plywood • Wirebound • Hinge
Corner • Nailed Crates • Wood-
Steel • Nailed Wood • Shop and
Tote Boxes**

**★ Consult with our packing engineers.
We offer you the services of our designing
and testing laboratory without obligation.**

CHICAGO MILL AND LUMBER COMPANY

33 South Clark Street

Chicago 3, Illinois

Pioneers for Over 60 Years

Plants at: Helena, Ark. • Greenville, Miss. • Tallulah, La. • Chicago, Ill. • Plymouth, N. C.

Steel situation

→ from Page 48

will be obliged to adjust their schedules to the availability of their major raw material. There can't be any 7 million car automobile years in the immediate future, though the industry probably could build that many cars if the necessary materials were

available, and certainly they could sell them. The same thing goes for other steel-consuming industries. If I seem to be throwing cold water on a lot of hopes and plans, I can only say that this is the realistic way to look at it.

The steel industry is allocating its output on a fair and impartial basis,

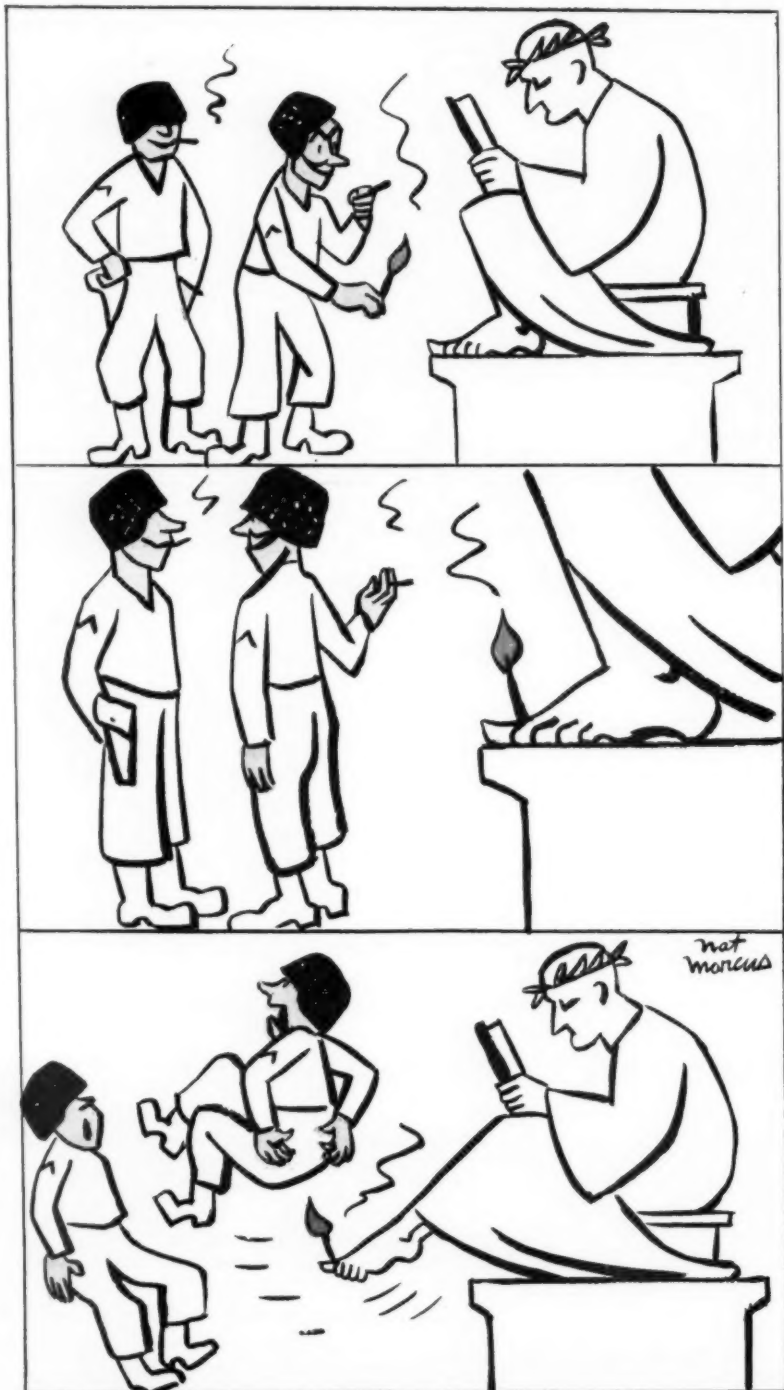
and is better equipped to do so than any government agency. I have spent a lot of time on both sides of the fence and I know. If the industry is permitted to continue on this basis, without further interference by Washington planners, it will see that all customers entitled to steel get as much as overall limitations permit. This won't, and can't, be as much as they want, but it will be fairly done. If any attempt is made by the government to establish further controls on steel, the results will be disastrous.

Most of our problems, as I think you will agree, would be solved rather quickly if business men were permitted to operate in the manner their common sense and experience have taught them to be for the greatest good of all concerned, unhampered by controls and restrictions, many of which have some socialistic goal in view. We shall never be free from our present confusion while such controls continue.

I want to make it plain that we think this country has sufficient steel capacity for its *normal needs* and for export. The requirements of the next few years, both domestic and export, will be highly abnormal, and export demand will be abnormal for many years to come.

Once the great domestic shortages are made up, we can comfortably satisfy our own needs and those of many other countries. In the next several years all of us must settle down to programs that are capable of achievement. I hope we can look forward in the not far distant future to doing business again in the American way, under which any man or any company prospers in proportion to the service rendered and the unfit fall by the wayside. When that time comes I am confident we can look forward to the greatest period of prosperity we have ever seen.

Porcelain enameled coffee pots will keep cleaner if leftover coffee is not allowed to stand in them after the meal is finished. If coffee pots are used two or three times a day, boil a solution of water and soda in them once a week to freshen them.



**Start Right
from the Steel out
with
CENTURY
Ground Coat
Frit**



An architect designs a foundation with the completed building in mind, specifying materials and construction accordingly. He knows the structure can be no better or longer enduring than the foundation. Enamelers, too, realize the importance of starting right from the steel out with proper ground coat frits. That is why so many quality producers specify Century ground coat frits as their "foundation for better enameling."

Century ground coat frits have established a time-tested record of performance in the plants of larger appliance manufacturers and other

producers of porcelain enameled products. Year after year, ton after ton, Century ground coat frits have performed as the abuse-defying bond so essential between steel and cover coat.

Take full advantage of Century frits' ease of application. Invite trouble-free shop operation to your plant, now. Phone or write for —



CENTURY VITREOUS ENAMEL COMPANY, 6641-61 S. Narragansett Ave., Chicago 38, Ill.

→ from Page 41

during the war was with the Geo. M. Clark Division of American Stove.

New Knoxville enameling plant

Cherokee Porcelain Enamel Corporation is the name of a new jobbing plant in Knoxville, Tennessee. R. L. (Bob) Reid, formerly of Cleveland-Tennessee Enamel Co., is president; W. Glenn Hicks is vice president and treasurer; and Ed. L. Hicks is vice president and secretary. The Hicks brothers are owners of the Post Sign Company, Inc., also of Knoxville.

The new plant will have 13,000 feet of floor space. The first furnace installed is a 5' x 12' electric box type. The company plans to do stove work, signs and architectural porcelain enameling.

Latest in packaging displayed at Atlantic City

The best designed packing containers currently used to ship such products as machine tools, china, electrical appliances and pharmaceuticals were exhibited by the Wirebound Box Manufacturers Association, April 2 to 5, at the Public Auditorium, Atlantic City, New Jersey. L. S. Beale, secretary of the Wirebound Association, has announced.

Approximately 50 different packing containers engineered for as many different types of products, and modern techniques of scientifically testing these containers, were displayed in the two booths during the exhibit, which was in charge of Allan R. Smith, assistant secretary.

Among those assisting Smith in the plans for the exhibit was Harold Bullard, Chicago Mill and Lumber Company, Chicago.

Bendix elects officers

Judson S. Sayre was re-elected president of Bendix Home Appliances, Inc., at the annual spring stockholders' meeting. H. J. Dowd, New York City, was re-elected chairman of the board. All directors and officers were re-elected as follows: Sayre, Dowd, E. R. Farney, and Oliver T. Cowan, New York City, and E. W. Ross, Detroit, directors; W. F. Oliver, A. R. Constantine, H. L. Spencer, vice presidents; W. J. Reuscher,

vice-president and treasurer; Cowan, assistant secretary.

Joseph D. Sharpe, chief accountant, was elected secretary to assume duties previously held by W. J. Reuscher.

Change in name

Roberts & Mander Corporation is the new name announced by the Hatboro, Pa., manufacturer of Quality ranges, formerly known as the Roberts & Mander Stove Company. This change in name has just been announced by Henry S. Minster, president.

Former U. of I. men in England

John R. Chesters has been appointed assistant director of research for the United Steel Companies, Sheffield, England. He is the author of a new book on "Steelplant Refractories." Mr. Chesters was a Fellow on the Commonwealth Fund in the Department of Ceramic Engineering from '32-'34.

T. W. Talwalkar, who received an M.S. in Ceramic Engineering, has

been appointed as head of the laboratories for Tata Iron and Steel Company, largest steel company in the British Empire.

American Ceramic Society

The 48th Annual Meeting of the American Ceramic Society will be held at the Hotel Statler, Buffalo, N. Y. from April 28 thru May 2.

"Back-to-the-garden" movement at Carnegie-Illinois

In keeping with the Government's appeal, Carnegie-Illinois Steel Corporation has outlined a "back-to-the-garden" movement for its part to balance food shortages resulting from American aid to Europe. Basing the program on the experience gained during the war years, when thousands of their employees planted and raised crops in victory gardens, this subsidiary of U. S. Steel is prepared to assist planting enthusiasts on such points as securing and maintaining adequate plots, arranging and sponsoring gardening and canning meetings, soil testing, garden tips, and donating United States savings bonds.



A porcelain enameled tub solves the youngster bathing problem. Handy at table-top level; steady even tho baby squirms; readily portable; and easily cleaned.

WELDING FOR LIFE



MANY A MAN'S LIFE DEPENDS ON THIS WELD

During the war, continuous seam welded, air tight powder charge casings lent many a helping hand to soldiers and sailors forced to abandon ship on landing operations, etc.

In the event of serious disaster to a ship, hundreds of these air tight ammunition tubes were dumped overboard and enabled the men to float safely to shore.

This same continuous seam process, together with projection, spot and electric welding are offered by New Monarch for the assembly of your products, plus a complete line of steel stampings and fabrication service.

Write now to New Monarch for assistance on your problems.

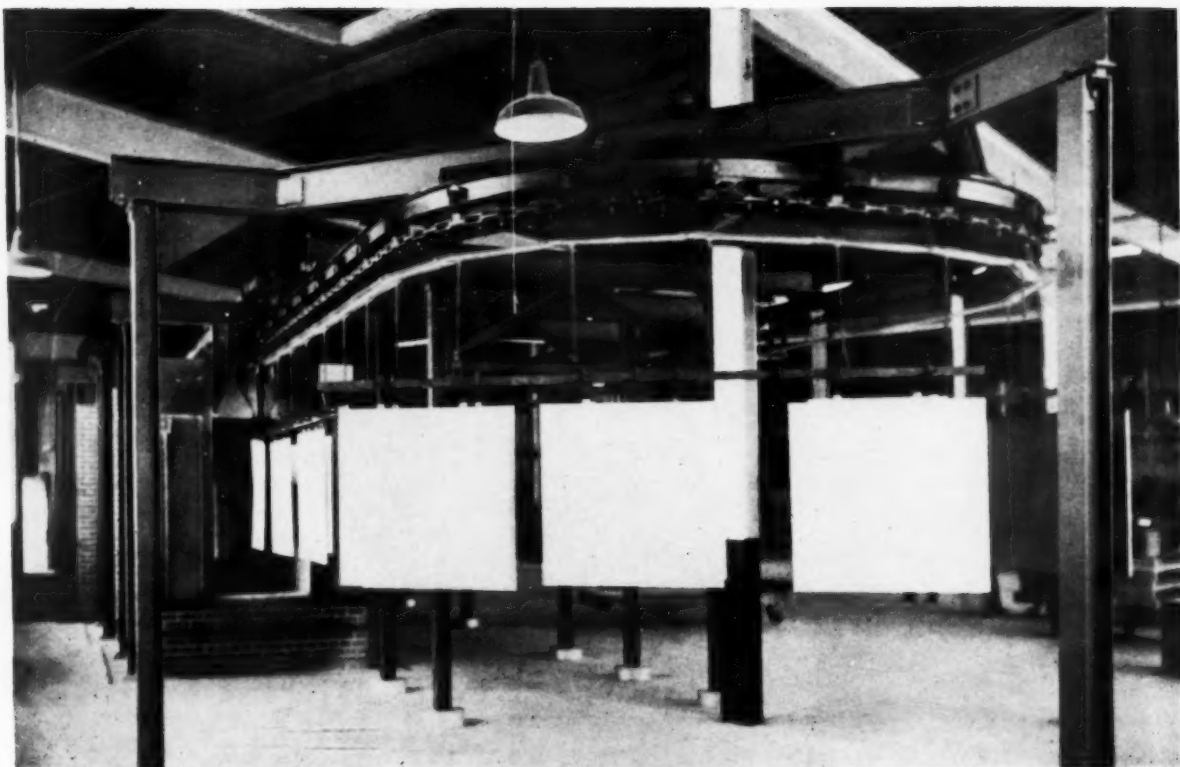


When you think of Stampings, think of

NEW MONARCH MACHINE & STAMPING CO.

406 S. W. NINTH STREET

DES MOINES 9, IOWA



Only BOLAND offers ALL of these Continuous Furnace Features

STRAIGHT AWAY, "SINGLE FLOW" DESIGN — For minimum furnace opening and freedom from "furnace conveyor wrecks."

FLOATING ROOF CONSTRUCTION (BOLAND Patent No. 2,156,008) — Reduces heat loss and prevents conveyor distortion—It's as solid as Gibraltar.

EQUALIZED TEMPERATURE — From muffle walls on both sides of the ware, plus a pre-heat zone that raises ware temperature gradually from room temperature to firing heat.

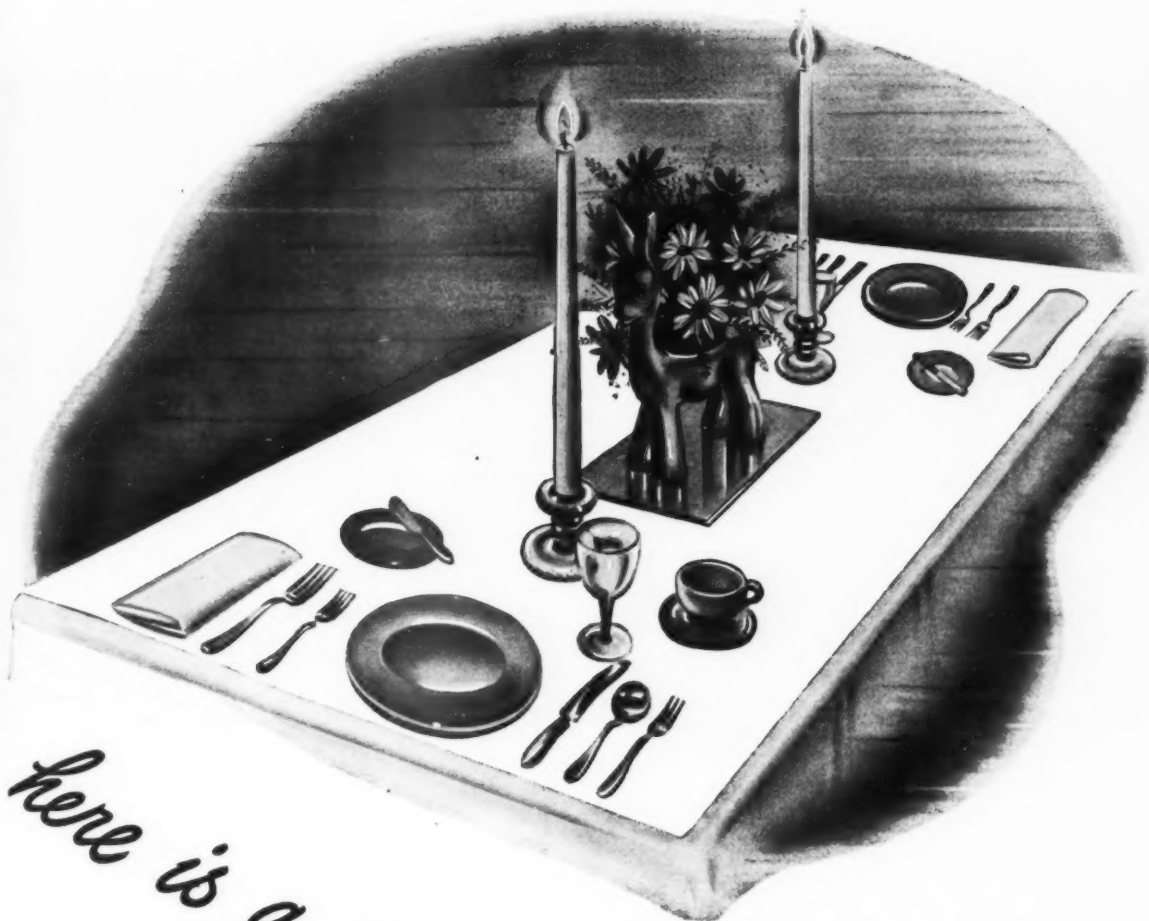
A FULL FURNACE LOAD — Made possible in the Boland furnace through straight away construction and wide radius conveyor turns. (Wrap-around stove bodies or similar parts can be hung with only 12" separating the units and still have a 3" clearance on the radius turns.)

These features mean high production, low operating cost and, above all, proper firing conditions for the production of quality enamelware.

ALBERT J. BOLAND COMPANY

407 NORTH EIGHTH BUILDING • ST. LOUIS 1, MO.

Designers and Builders of Continuous and Box Type Enameling Furnaces



*here is a new **TURQUOISE** **

**COLORS
OPACIFIERS
FRITS
CHEMICALS**



Harshaw Turquoise S-500 adds a long needed color to the ceramic palette. Cobalt and copper free, this new turquoise is used successfully up to a cone 12 fire, and functions equally well as a glaze stain, body stain, or enamel oxide; and when specially prepared (US-500) as an under-glaze color. Available for prompt shipment.

* Patent Applied For

THE HARSHAW CHEMICAL CO.

1945 East 97th Street, Cleveland 6, Ohio
BRANCHES IN PRINCIPAL CITIES